INFORMATION PROCESSING OF RELIGIOUS SYMBOLS IN BREAST CANCER ADVERTISEMENTS AMONG AFRICAN AMERICAN WOMEN

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Ву

CRYSTAL Y. LUMPKINS

Dr. Glen T. Cameron, Dissertation Supervisor

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The undersigned, appointed by the Dean of the Graduate School, have examined the dissertation entitled,

INFORMATON PROCESSING OF RELIGIOUS SYMBOLS IN BREAST CANCER ADVERTISEMENTS AMONG AFRICAN AMERICAN WOMEN

Presented by Crystal Y. Lumpkins A candidate for the degree of Doctor of Philosophy

And hereby certify it is worthy of acceptance

Professor Glen T. Cameron

Professor Shelly Rodgers

Professor Cynthia Frisby

Professor Margaret Duffy

Professor Jennifer Aubrey

DEDICATION

I would like to dedicate this dissertation to my husband Garry L. Lumpkins Jr., my boys Israel Christian and Isaiah Christopher, and my parents, Israel Boyd Simms Groves Jr. and Evangeline Groves. Garry, I cannot thank you enough for your sacrifice as we took this journey together. I thank you for the countless times that you kept encouraging me, stayed up through the night to help me muddle through theories, statistical equations that just didn't make any sense and listening to me prepare for conference presentations. I am thankful most of all for you being a true friend, provider, my prayer warrior and a true support and Paraclete through this entire process. I thank my boys for your patience and offering words of encouragement and allowing mom to spend endless hours at the library several evenings a week and on the weekend. I thank you mom and dad for your continued support and for keeping the kids so that I could study at the library in Marshall and also to give Garry a break as well. I also thank you for your prayers and for being cheerleaders in this journey. I praise God for you all and thank Him that He gave me a family and support system as phenomenal as you. I can truly say that I am witnessing the true meaning of family every day and that this degree is shared by all of us. Finally, I thank the Lord also for His grace and mercy throughout this tedious but rewarding journey. His grace was and is sufficient for me.

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INFORMATION PROCESSING OF RELIGIOUS SYMBOLS IN BREAST CANCER ADVERTISEMENTS AMONG AFRICAN AMERICAN WOMEN

Crystal Y. Lumpkins Dr. Glen T. Cameron, Dissertation Supervisor

Abstract

African American women are dying disproportionately from breast cancer compared to other ethnicities as it is the second leading cause of cancer deaths among this group (American Cancer Society, 2007). Even though the death rate has decreased, the survival rate of African American women with breast cancer compared to White women continues to decrease (American Cancer Society, 2005).

This research study attempted to address this issue by examining information processing of religious symbols in breast cancer advertisements among African American women. Because this group of women has the tendency to be religious (Mattis, 2000) and research has shown that health is highly correlated with spirituality among African American women (Holt, Clark, Kreuter & Rubio 2003), it was hypothesized that a religious symbol, the cross, would have an impact on the way African American women processed health advertisements.

Research to date has been increasing as to how religion and spirituality in particular impact health behavior among African American women. Recent studies have shown cultural tailoring to be important when creating promotional

public health materials to individuals via direct marketing and the internet (Kreuter, Skinner, Steger-May, Holt, Bucholtz, Clark, & Sanders-Thompson, 2003). However, very little research has investigated the roles of religion and spirituality in advertising health messages via the mass media to African American women.

Even though the hypotheses were not fully supported, there was a main effect of the cross among African American women highly and lowly involved with health. In particular, there was a main effect of the exposure to a cross on attitude toward the ad and behavior intention toward the sponsor. This finding could not only indicate the impact of religion on information processing but also the strong correlation that spirituality has among African American women (high and low-involved with health). Spirituality was also shown to have a main effect for the dependent variable of memory of the brand; spirituality, however, was not shown to be a moderator in the interaction of health involvement and religiosity.

In sum, the method and theoretical models were used in this study to show the merit in evaluating the effectiveness of religious symbols, such as the cross, in health advertisements targeting African American women.

Practical implications of the study include the branding of the church as a socially desirable commodity. The benefits of this type of "branding" may position the church sponsor as not only a producer of healthy products (i.e. prevention messages) but also a marketer of cancer prevention information. Ultimately, theoretical and practical implications of this study can assist researchers and health communicators who wish to investigate the issue of

religious effects in health information targeting African American women.

"Beloved, I wish above all things that thou mayest prosper and be in health, even as thy soul prospereth" 3 John 1:2

(The Bible, New King James Version)

INFORMATION PROCESSING OF RELIGIOUS SYMBOLS IN BREAST CANCER SCREENING ADVERTISEMENTS AMONG AFRICAN AMERICAN

Chapter 1

WOMEN

Statement of the Problem

In the twenty-first century health awareness and education has been the focus of several agencies and organizations. This emphasis has produced many tangible and positive results including technological advances, scientific breakthroughs and medical discoveries. These factors have enriched thousands of lives and prolonged life as the nation witnesses an increase of an aging population and the detection of disease and cancer. However, health disparities continue to persist as health personnel work to decrease the disproportionate numbers of individuals dying from certain cancers.

In the United States African American women are a sub population that fall in this category and are affected adversely by these health issues in disproportionate numbers; African American women are not only the highest at risk to contract and die from HIV AIDS but are also more likely to die from heart disease and breast cancer (CDC, 2007; ACS, 2005).

In recent years there has been a thrust of research (REACH or "Racial" and Ethnic Disparities in Health 2010," 2007) targeting this population as statistical comparisons of African American women to other ethnicities show that while some progress has been made, disparities still exist (CDC, 2007). Health

researchers indicate various reasons why African American women are dying and or suffering disproportionately from cancer and chronic conditions. Such factors as economic status, education, medical coverage and doctor/client relationships have been identified as barriers to minimizing the disparities (ACS, 2007). Of particular interest to the researcher is the morbidity and mortality of African American women due to breast cancer. Researchers and Breast Cancer Survivorship organizations such as Sisters Network, the largest African American breast cancer survivorship, indicates that African American women are not only dying more from breast cancer when compared to other ethnicities, they are dying younger and are diagnosed with more aggressive forms of breast cancer when they are diagnosed ("Sisters Network, Cancer Facts," 2007). A comparison of Midwest states and regions throughout the United States provides an overview of the disparities that exist.

Morbidity and Mortality Rates among African American Women

A 2003 report from the Centers for Disease Control (CDC) and National Cancer Institute (NCI) details the gravity of morbidity and mortality rates among not only women and other minorities but African American women and individuals living in various states in the Midwest and in different regions of the country. The following tables show that the cancer incidence rates among African American women in the Midwest are lower than Caucasian women but are slightly higher for cancer death rates (CDC, 2003).

Breast Cancer Incidence Rates Among Women in the United States

Table 1 (www.cdc.gov/nccdphp/states/) *Rates are per 100,000 persons

US Statistics	Cancer Incidence Rates	Cancer Death Rates
Caucasians	406.7	159.7
Blacks	379.1	188.2
Hispanics	316.8	106.3
Asians/Pacific Islanders	263.9	97.3
American Indians/Alaska Natives	247.7	106.8

Table 2. Comparison of Cancer Incidence and Death Rates by Region

US Census Regions	Cancer Incidence Rates	Death Rates
Northeast	124.1	26.2
West	121.2	23.5
Midwest	119.2	25.7

In a state by state comparison of cancer deaths, the CDC ("United States Cancer Statistics," CDC 2003) results show an even clearer picture of cancer deaths. The comparison shows Blacks are dying at an even higher rate from breast cancer; Missouri rates are slightly lower when compared to Blacks living in other Midwest states but are disproportionate when compared to other ethnicities in other states (See Table 3 - Appendix). In a 2004 report, the American Cancer

Society estimated that 870 women would die from breast cancer and 4,680 women would be diagnosed with this cancer in the state of Missouri (ACS, 2004).

This study attempts to address this problem by investigating information processing and the effectiveness of message characteristics in persuasive communication (breast cancer advertisements) among a group of African American women living in the Midwest. By looking at how African American women process persuasive communication the researcher posits that this could provide a basis and eventually an ongoing investigation for creating effective health communication strategies to eventually help reduce health disparities.

Chapter 2

Introduction

Breast cancer is a national epidemic that has affected thousands, particularly African American women (ACS, 2005) where the mortality and morbidity rates are disproportionately high when compared to other ethnicities (NCI, 2006). A 2006 report shows African American women are more likely to die of breast cancer than Caucasian women even when demographics such as income and age are considered (Bickel et al., 2006).

Health campaigns have been created to address breast cancer morbidity and mortality rates among African American women but are lacking in scope, cultural sensitivity (Flora & Pierson, 1997) and pinpointing specific ways to change health behavior. Among low-income African American women and those with limited education, the numbers who are regularly screened are minimal, and several barriers such as the lack of insurance and fear prevent breast cancer screening (Champion & Scott, 1997; Frisby, 2002; Lee, 2004;).

Through formative research, health and strategic communicators have surveyed African American women concerning beliefs and attitudes toward breast cancer screening and promotion and found socio-cultural factors are an important part of the message and increases "liking" and personal relevance to

the message (Kreuter, et al., 2004). Among African American women, the sociocultural factors of religiosity and spirituality are factors that highly correlate with
health beliefs and can be predictive of health behavior (Holt, Clark, Kreuter, &
Rubio, Kreuter, 2003). Religiosity and spirituality are multi-dimensional and have
shown to be important in how African American women not only cope in difficult
situations but also seek preventative health choices (Dessio, et al., 2004). A
modest but growing body of scientific investigations of spirituality and religiosity
in health care (S/RH) and proclivity for African American women to hold spiritual
and religious beliefs, leads the researcher to posit that this type of investigation
could address how communication of breast cancer detection with targeted
information could help reduce breast cancer disparities, morbidity and mortality
rates among African American women in the United States.

In this study, Judeo-Christian spirituality and religion will be the focus as scholars have extensively investigated the role of spirituality and religion among individuals in the Christian faith and also those living in Western civilization (Koenig, 2001). A number of investigations of spirituality and religiosity among African Americans are primarily focused on practicing Judeo-Christians (Karenga, 1989; Mattis, 2000;) however future research of other religions and spirituality are warranted as Islam and other mainstream religions in Western civilization are increasing among African Americans (Karenga, 1989).

Examining and testing information processing of messages is one approach health communicators may enhance strategic communication efforts

aimed to positively affect attitudes and behavior toward breast cancer screening and subsequently reduce morbidity and mortality rates.

The purpose of this study was to test the effects of religious symbols as personally relevant message characteristics in health advertisements targeting African American women. Religious symbols (the cross) in breast cancer advertisements were manipulated while scientific breast cancer messages were held constant. Involvement with breast cancer screening and the function of the degree of self-expressed spirituality were also measured.

The method in this study was an experiment. The independent variables were religiosity and health involvement and there was one moderator, spirituality. Self-expression of spirituality was also analyzed as a between-subjects factor in subsequent analysis. The dependent variables were memory for the brand, memory for the ad, attitude toward the brand, attitude toward the ad and behavior intent toward the sponsor.

Understanding the interplay of health promotion messages can be applied in the case where health promoters are exploring ways to strategically enhance the effectiveness of breast cancer screening promotions and ultimately increase breast cancer screening practices among African American women. Knowing if religious symbols in health advertisements increase or decrease information processing among African American women who are lowly or highly-involved with breast cancer screening can provide pertinent information not only in health campaigns but also interventions to increase mammography and other breast cancer screening practices. This investigation could also help health

communicators to pinpoint behavioral determinants that lead to behavior change when socio-cultural factors like religion are implemented in the message design.

Chapter 3 Theoretical Framework

Elaboration Likelihood Model of Persuasion

The elaboration likelihood model of persuasion (ELM) is a model that has been utilized to explain and predict a receiver's involvement with message topics (Kirby, Ureda, Rose & Hussey, 1998;Petty & Cacioppo, 1986). According to theorists, ELM is a model that explains *how* receivers process information via dual processing routes termed the central and peripheral routes. Contrasted to other theories and models where it is believed that persuasion only occurs when receivers are actively processing information (Greenwald, 1968; McGuire, 1989), the ELM holds that persuasion can occur when thinking is high or low (Petty, Priester & Brinol, 2002). The model also predicts whether that receiver could be persuaded by a communication message based on several factors (e.g., source and recipient factors – Petty, 2003).

One of the factors considered to be an integral part of the ELM is the receiver's involvement with the message. Involvement could impede and or increase the likelihood of persuasion depending upon the intrinsic or internal involvement with the persuasive communication. The ELM holds the receiver will be either motivated to think about the message or will think about other relevant messages related to the persuasive message being communicated. These messages may bolster the argument for persuasion or counteract with the receiver's existing attitudes (Petty, et al., 2002). In addition to the receiver's

motivation to think about the message, the individual must have the *ability* to elaborate on personally relevant issues in the persuasive message. Prior knowledge and other factors such as attitude toward the message and memory may increase or decrease the likelihood of the receiver's ability to process the information. If the receiver is not motivated to think about the message nor has the ability to think about the persuasive message, ELM holds that the receiver can still be persuaded by the communication message but only peripherally (Petty & Cacioppo, 1986; Petty et al., 2002). This shows the strength of the model in that receivers may be persuaded in two routes whether the message is personally relevant or not.

Figure 1 shows how an individual may process information via the peripheral or central route. Distinct message elements such as arguments and peripheral cues can influence information processing of messages. If the receiver processes information peripheral to the issue, the receiver is persuaded by information that is extraneous to the message and the individual is classified as being lowly involved with the issue. More specifically, information among low-involved individuals is personally relevant and thus persuasive during affective states or moods (Petty et al., 2002); these messages are weak arguments and could be the attractiveness of the source or some other characteristic that is not central but peripheral to the issue in the message (Petty et al., 2002). If the receiver processes information central to the issue and the arguments in the message, the individual is classified as being highly involved with the issue; this

also means that the individual will most likely be persuaded by message characteristics that are central to the issue.

As mentioned earlier, involvement is integral in predicting whether a receiver would be motivated to think about a persuasive message, able to process that information and ultimately change his or her attitude. Involvement here integrates several factors to consider when predicting which determinants will lead the receiver to a route of persuasion.

Individual difference variables such as prior knowledge and cognition should be considered (Petty & Cacioppo, 1980) as they may be important moderators to the route of persuasion and increase the individual's ability to process the information. In addition, the strength of the argument is also an indication of whether a receiver will be persuaded by a message. Depending on the argument of the message, the receiver's attitude will be favorable or unfavorable. Cognition is whether the receiver will retain the information in the message and change the present attitude or resist the persuasive communication by retaining old attitudes. Receivers who have prior knowledge or experiences that relate to the persuasive message are more likely to elaborate on the information and thus centrally or actively process information. Attitudes changed via the central route (strong arguments) are part of the receiver's cognitive structure and can be accessed from memory (Petty, et al., 2002); attitudes changed via the peripheral route are based on weak arguments and from simple cues that can easily dissipate. However, given the ELM's position where attitude change can occur through either the central or peripheral route, it

is plausible that peripherally thinking about a persuasive message could become a part of an individual's short-term memory and attitude change even if it is relatively ephemeral.

ELM has also been applied to predict product involvement and appeals that may be effective for different types of audiences (Petty, Cacioppo & Schumann, 1983). In an experimental study conducted by Petty, Cacioppo & Schumann (1983), the content of the advertisement was an important determinant of product attitudes when the participants were highly involved with the product; however when the subjects were lowly involved with the product, celebrity status or likeability and credibility of the product endorser was important.

The strength of the ELM and the concept of involvement not only explain active and passive processing among both high and low-involved individuals but lay a strong theoretical foundation to predict an attitude-behavior link in the persuasive communication process.

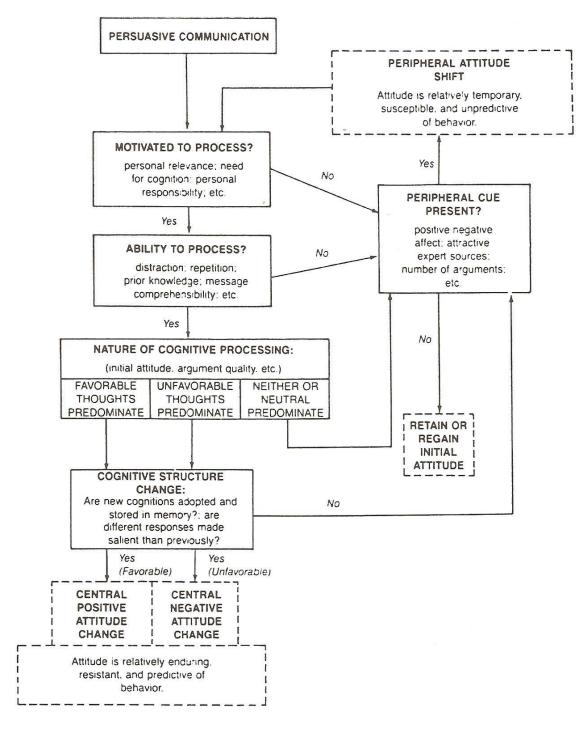


Figure 1. Elaboration Likelihood Model (Petty & Cacioppo, 1986)

Theories of Involvement

The concept of involvement is integral in the discussion of the ELM's theoretical and conceptual implications on persuasive communication and should be further examined. The conceptual disagreement of involvement has been divisive among researchers for many years as the debate mainly centers on the effects and the process of persuasive information among receivers. In efforts to provide a solid theoretical foundation and evidence for the strength of the ELM, the researcher compares and contrasts conceptualizations of involvement.

Involvement has been viewed as a concept central to understanding the effects of mass communication and whether the audience is active or passive (Roser, 1990). There also is the debate over what involvement is and its impact on attitude formation and change. Some of the dominant viewpoints of the involvement concept derive from social judgment theory and Krugman's (1965) alternative view that has been widely used in consumer research. According to social judgment theorists highly-involved individuals reject communication or topics that they are highly involved with. These individuals are more resistant to persuasion and viewpoints are within a continuum of unacceptable attitudes (Sherif & Hovland, 1961; Sherif, Muzifer & Nebergal, 1965). Krugman's explanation of high involvement contrasts with social judgment theorists as he argues increased involvement does not reduce or prevent persuasion but shifts communication in a sequence where cognitions are affected first, then attitudes and ultimately behavior; however under low-involved conditions communication most likely affects behavior first and then attitudes. The ELM is similar to

Krugman's viewpoint and explanation of persuasion in high-involvement conditions but differs for low-involved conditions. Because the ELM holds there are two routes an individual can actively process information, communication in low-involved conditions could affect attitudes first and *then* behavior. In the low-involved condition something as simple as the attractiveness of a person or peripheral to the message could lead to an attitude change.

In high-involved conditions, social judgment theorists nor Krugman take into account that issue relevant information could motivate highly-involved individuals to think about the information. It is also important to note that Krugman's belief was that "involvement" was not only a characteristic of the individual but was the communication *medium* (Salmon, 1986); if an individual had high personal involvement with the mass media, then that individual could be persuaded. Krugman posited that an individual exposed to a low-involvement medium would only change his or her attitude over a period of time. His definition however likened involvement as "the number of conscious bridging experiences, connections, or personal references per minute that a viewer makes between his or her own life and a stimulus," (Krugman, p. 248 in Salmon, 1986). This definition also further distinguished involvement as a cognitive process rather than an affective state.

The position of the ELM is that a high-involved individual will devote more cognitive resources on an issue or product and this can lead to either enhanced or reduced persuasion depending on the argument in the message (Petty & Cacioppo, 1981; Salmon, 1986). As it relates to this study then, it is reasonable

to suggest that a person who is lowly involved with health is more likely to be motivated to actively process a message that is appealing based on peripheral cues in an affective state; it is also plausible that a highly-involved individual would be more *accepting* rather than resistant to a message that is personally relevant as social judgment theorists believe is theoretically flawed.

In efforts to identify the various aspects of involvement, a typology was developed by Salmon (1986) to categorize and show the "family" of constructs that encompass both affective and cognitive derivatives.

Figure 2 shows the typology that includes a continuum where involvement at one end is a personality trait; involvement in the ELM tradition that encompasses salience, relevance and future consequences is at the other end of the continuum.

According to Salmon, the family of involvement includes salience, relevance, perceived risk, attention, elaboration and audience activity. As it relates to the cognitive and affective derivatives of involvement, other researchers suggest there are three components that exist which include cognitive, affective and behavioral components (Rothschild & Ray, 1974). These derivatives of involvement conceptualized in terms of how African American women process religion and spirituality could predict the interaction between the individual and the health message. Salmon discusses the importance of involvement in the acquisition of information among individuals internally.

Involvement as Involvement as an Involvement as an Involvement as salience, Involvement as a characteristic relevance, future consequences of a product, issue, or situation of a stimulus for an individual in a stimulus (Social Judgment Theorists & Krugman)

Involvement as salience, Involvement as a characteristic relevance, future consequences of a product, issue, or situation that arouses concern in most or all persons.

Figure 2. Typology of Involvement (Salmon, 1986).

In internal information processing, a highly-involved individual processes incoming stimuli more attentively, systematically and more information is retrieved and retained. Therefore, the internal derivatives of information processing as it pertains to involvement can provide a basis to how spirituality and religion can play a large part in how African American women process, retain and think about health messages that incorporate religion.

Message Involvement

The ELM tradition for studying involvement and testing the model has been to experimentally manipulate involvement by leading participants to believe persuasive messages have personal implication to increase interest in a topic (Petty et al., 1983). More specifically in advertising research, the procedure has been to inform the high-involved group that they would evaluate a product while participants in the low-involved group would be told that they were not expected to evaluate the product and thus given no background information (Petty et al., 1983). McGuire (1989) suggests the relationship between the audience's

characteristics and message elements are factors that could influence cognitive and behavioral responses to persuasive messages. He also suggests the characteristics of the receiver are an important consideration in designing persuasive messages and can also serve as intrinsic topic involvement.

Cacioppo, Petty, Kao and Rodriguez (1986) posit audience characteristics may play a major role in how individuals process information (Cacioppo, et al., 1986).

Involvement was not manipulated but conceptualized as a combination of personal relevance and importance of breast cancer screening. The message was manipulated where the researcher hypothesized that messages with religiosity, associated as a peripheral cue would induce affect among African American women who are lowly-involved with their health but also among African American women who are highly spiritual. It was also hypothesized that high-involved African American women would elaborate on central cues in the advertisement because of prior knowledge of breast cancer screening and the ability to process scientific information concerning breast cancer.

The message element of religiosity was manipulated as a peripheral cue in the advertisement because it served a dual purpose: 1) to increase affect or induce a positive feeling among women who were lowly-involved with their health and 2) as an individual difference variable that could increase motivation to think about a product as well as the ability to think about the message among highly-spiritual women. However, scientific cues in the breast cancer screening advertisement served as the central cue. Here religiosity was conceptualized as

a variable that could impact African American women's beliefs and attitudes that were both highly and lowly-involved with their health.

Dotson and Hyatt (2000) tested the effects of religious symbols as peripheral cues in advertising messages targeted to low-involved and high-involved individuals (with products) who were either high or low in religious dogmatism. While attention and attitude toward the advertisement among low-involved individuals were not significant, subjects high-involved with the product had more favorable attitudes toward the ad which supported the predictions of ELM that subjects' attitude toward the ad is a function of cognitive processing and not an affective response to a religious symbol (the cross). Dotson and Hyatt state that ELM was partially supported because the religious symbol of the cross in a pet insurance advertising product may have been offensive; they further reasoned that if peripheral cues are used, characteristics that target the audience must be considered, how the message is presented and what associations are included with the cues.

The target audience in this study was African American. The peripheral cue as a religious symbol in the breast cancer screening advertisement may lend to more affective processing of low-involved individuals and favorable attitudes toward the peripheral cue.

A study that utilized ELM to predict intended health behavior among low-income African American women found that favorable peripheral cues in mammography promotional messages positively influenced low-involved women (Kirby, Ureda, Rose & Hussey 1998). The findings suggest that favorable

peripheral cues may increase stronger intentions in low-involved women to seek mammography information by increasing message attention and/or by transferring favorable cue affect to the promotional message and the requested action. Researchers in this study also found that low-involved women had favored cues which were music selections embedded in health PSAs that focused on seeking mammography information. Several comparison tests among low-involved women who had viewed favorable cues in PSAs reported stronger intentions to seek additional mammography information compared to low-involved women who viewed unfavorable cues. The impact of favorable peripheral cues among low-involved women was one of the most important findings in the study.

This study also showed that mammography promotion messages with favorable peripheral cues (music embedded in the PSA) targeted to low-involved women, but also inclusive of high-involved women, may be more efficacious and would not pose any threat of reducing intention (Kirby, et al., 1998). As the ELM has been shown to help predict favorability toward a promotional message such as a PSA, and predict or explain behavior intention among low – and high-involved women, it is hypothesized in this study that low-involved African American women will have positive attitudes toward breast cancer screening advertisements with peripheral cues but also strong intentions to seek mammography information. It is also hypothesized that high-involved African American women will have an equal chance of having positive attitudes toward

the advertisement with peripheral cues compared to advertisements with scientific cues.

The ELM is a theory that can provide the framework to explain and predict how peripheral cues such as a religious symbol in an advertisement can persuade how African American women process mass mediated information.

The concept of spirituality and also affiliation with religion not only allows low and high-involved African American women to think about the content but increases the ability to process information as these individuals most likely have prior knowledge and comprehension of religion and are spiritual. Figure 1 shows how African American women could process persuasive communication in an advertisement.

Health Involvement among African American Women

Research indicates African American women respond better to messages and health communication programs targeted specifically toward them (Ansell, Dillard, & Rothenberg, 1988). In health campaigns, message designers can effectively reach the target audience by making the messages salient (Rimal & Adkins, 2003); and choosing message features such as "vividness, repetition, and placement in the mass media, among others, that communicate "this is important to your health," (Murray-Johnson & Witte, 2003, p. 476). These features may also create the cognitions necessary for motivation (Witte, Meyer, & Martell, 2001).

Petty and Cacioppo (1986) found that an individual's level of intrinsic or internal involvement could affect the amount of processing of specific message elements, particularly arguments and peripheral cues. They examined issue involvement in several experiments and their conclusions about involvement showed that involvement among college students had significant impact on information processing, storage and retrieval. Their research also showed certain facets of a persuasive message have varying levels of impact on individuals with high - and low - involvement levels (Petty and Cacioppo, 1979). Chafee and Roser (1986) showed that the level of knowledge-attitude-behavior consistency varies depending on the operationalization of involvement. They theorized that individuals highly involved with health would have a greater knowledge-attitude behavior level of consistency and were more likely to change their attitudes and also behavior with prior knowledge (Roser, 1990). However when affective involvement was measured, the risk of developing heart disease showed that the perceived risk was correlated with less consistency but attitude extremity was correlated with greater consistency. If the individual has a positive attitude toward the perceived risk, the possibility of behavior change is much greater. Here, the attitude-behavior link among African American woman would include their attitudes, knowledge and beliefs about religion and breast cancer screening.

Considerable research has been conducted on persuasive health communication and the attitude-behavior link. The ELM provides a strong starting point for understanding this link and can be utilized to predict behavior

when combined with theories that predict social behavior. Attitude has been shown to be a strong indicator of behavior intention (Azjen & Fishbein, 1980). Azjen and Fishbein reasoned individuals engage in certain behaviors because of their attitude toward the behavior and also significant others or what they termed as "norms" (Azjen et al., 1980). The theory of reasoned action and Azjen's later expansion of the theory of planned behavior attempted to explain an individual's perceptions and intentions of social behavior. These theories while important in understanding the attitude-behavior link in predicting social behavior fall short when predicting health behavior among minority populations. In addition, the attitude that the individual has toward the message can lead to behavior change but behavior change among individuals who perceive risks and susceptibility can be better explained and predicted by the HBM. While ELM was an integral part of predicting attitude toward the advertisement, recall of information and behavior intention in this study, the health belief model provided a more holistic view of how African American women perceived the advertisements and how they were motivated to action and increased intention to change behavior.

Health Belief Model

The health belief model (HBM) is one of the most extensively used models to predict health behavior change in health campaigns and interventions (Witte, Meyer & Martell, 2001). Conceptually, the HBM posits that preventative health behavior is influenced by several factors that include: perceived barriers to performing the recommended response, perceived benefits of performing a recommended response,

perceived susceptibility to a health threat, perceived severity of a health threat and cues to action (Rosenstock, 1974; Janz & Becker, 1984; Witte et al., 2001). Figure 3 shows the HBM and the likelihood of an individual changing health behavior. According to the HBM, individuals weigh the costs and benefits of deciding to take action which could be physical or psychological; if barriers outweigh benefits, the motivation for action is considerably reduced.

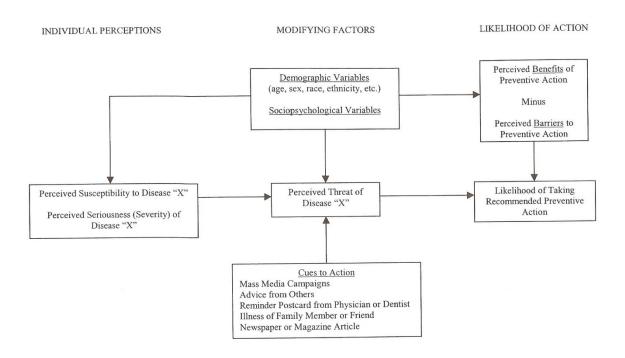


Figure 3. Health Belief Model (Janz & Becker, 1984; Rosenstock, 1974)

The HBM also has been identified as one of the strongest health behavior models that adequately address breast cancer screening beliefs and behavior intention among African American women. In a meta-analysis, Ashing-Giwa (1999) compared HBM and other health models such as the theory of reasoned action, theory of planned behavior and the transtheoretical model to examine socio-cultural dimensions accounted for in these paradigms. The overall analysis showed that the HBM had the

most strength when accounting for social-cultural dimensions and explaining factors that influence breast cancer screening practices and beliefs among African American women (Ashing-Giwa, 1999).

Calnan and Moss (1984) surveyed women in the U.K. to test the predictive power of the HBM to explain attendance to a breast self exam (BSE) class and compliance with actions recommended. The HBM was partially supported as personal vulnerability to breast cancer and previous positive health activities helped explain the decision to attend. Those who had knowledge or had heard of BSE were more likely to attend than those who had no prior knowledge or education of BSE. The probability that compliant behavior would reduce threat was not significant as there was no significant association between attendance and the perceived costs and benefits of BSE. Surprisingly there was a reverse trend that the HBM predicts where women who were more fatalistic about their health were more likely to attend the class than those who felt that they had more control over their health - however these were not statistically significant. A second analysis where the women were interviewed an additional time showed that the HBM was supported as it was the best predictor of changes in satisfactory practices of BSE was associated with beliefs about the costs and benefits of BSE.

In this study the HBM was used as part of the theoretical framework to predict perceptions about breast cancer screening among African American women and behavioral intention to get screened for breast cancer. While the ELM is a theory that posits behavior change can be predicted depending on the route an individual processes information, in some situations ELM has not been as strong to predict behavior change as it relates to individuals low-involved with an issue or product (Kriby

et al., 1998, Dotson et. al, 2000). The HBM more accurately identifies critical determinants of a behavior and appears to be one of several health models that can predict health behavior change among African American women considering breast cancer screening practices and also explain barriers to health behavior change.

Figure 4 shows an integration of the HBM and ELM where cues to action involve both internal and external stimuli but also a perception of threat to disease such as breast cancer. The barriers then are those elements that would prevent or determine the type of processing (central or peripheral) of a message and indicate the likelihood that individuals would either perform or not perform an action. Witte states that "perceived barriers" have been the strongest predictor of whether individuals will engage in health-protective behaviors and perceived severity is the weakest predictor (Witte, et al., 2001). The barriers, a crucial piece that the HBM was utilized to explain here in this study, would be whether African American women view religious symbols or peripheral cues as a perceived cost or benefit. Further, the model could explain how central or peripheral processing of information leads to attitude change and ultimately intention to change behavior. The perceived threat or susceptibility to breast cancer could explain involvement and how African American women would be motivated to process breast cancer detection messages.

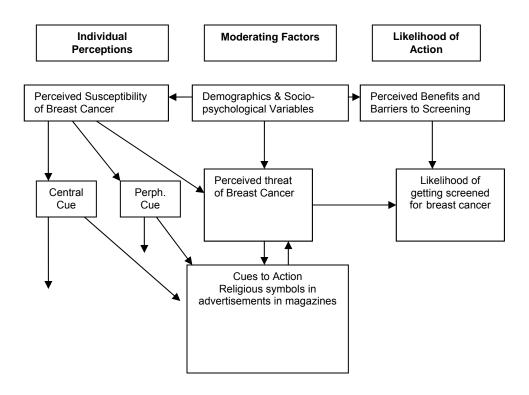


Figure 4. Integration of ELM and HBM Models

The integration of the HBM and ELM models may explain how African American women process persuasive messages concerning the threat of breast cancer and may help predict likelihood of breast cancer screening behavior.

Depending on perceptions of susceptibility (threat) of breast cancer, the integrated model proposes the individual will process that information centrally or peripherally. Moderating factors such as spirituality could not only impact the individual's perception of the threat of breast cancer but also cues to action presented in the advertisement. The cues to action are religious symbols.

Spirituality in this proposed model and the inclusion of religious cues in the persuasive material would lead to increased benefits and reduced barriers to breast cancer screening among African American women. The benefits are

hypothesized to outweigh the costs in this model and increase the likelihood of breast cancer screening.

Chapter 4 Literature Review

Religiosity and health among African Americans

The concept of religiosity among African Americans is multi-dimensional as religion in the African American experience has been expressed in terms of an active worship with others, a way to connect with God and is described as participation in certain rituals and beliefs (Mattis, 2000). Here religiosity among African Americans relates to the physical and positive act of connecting or fellowshipping with others and also contributing to a sense of community. Scholars have defined religiosity as the external act that an individual performs and is conceptualized as: "(a) an organized system of beliefs, practices, rituals, and symbols designed (b) to foster an understanding of one's relationship and responsibility to others living together in a community," (Koenig, Larson & McCullough 2001, p. 18). Additionally, among African Americans religion is closely identified with the Black church and conceptualized as the act of worship and fellowshipping with other congregants (cited in Zuckerman, 2000) and a basis for social cohesion (Frazier, 1974). Religion also has played a major part in not only the collective lives of African Americans but also the individual; and has been a symbolic center of African American life; the Black church also has been one of the only institutions owned and operated by African Americans (Ellison, Hummer, Cormier, Rogers, 2000). Religion scholar Maulnan Karenga (cited in Wilmore, 1989) terms present day religious practice among African Americans as "Black" religion. Black religion can be closely identified with "Black"

theology, a theology that is characterized as Black liberation that affirms Black people. Religious scholar Eric Lincoln states Black theology "is a theology of blackness and is the affirmation of Black humanity that emancipates Black people from White racism, thus providing authentic freedom for both White and Black people," (Lincoln, p. 192).

Black religion in the United States closely mirrors African religion where several themes are embedded in African American culture. Among those themes Karenga states the following:

African traditional religion "stresses the balance between one's collective identity and responsibility". "Like religion, a person is defined as an integral part of a definite community to which he or she belongs and in which he or she finds identity and relevance," (cited in Wilmore, 1989, p. 273).

In terms of the history of African Americans and religion, religion historian Charles H. Long theorizes three interrelated perspectives for the study of Black religion and posits they constitute symbolic images and methodological principles when examining religious phenomena among African Americans (Long, 1997). These perspectives are: a) Africa as (an) historical reality and religious image b) (Africa is) the involuntary presence of the Black community in America and c) (Africa is) the experience and symbol of God in the religious experience of Blacks. These perspectives may provide a beginning to understanding the practice of religion among African Americans (Long, 1997, p. 25) and how it relates to processing personally relevant information. The third perspective Long offers is most relevant to this study as religion is a physical manifestation of the ethereal and a higher power (God) through a communal experience with others.

Karenga states Black religion in America among African Americans was and still is predominately the Judeo-Christian faith; has emerged as an expression of self-consciousness; is a fulfillment of understanding themselves; and facilitates knowledge of African American history (cited in Wilmore, 1989). Several slaves converted to Christianity as not only an escape from slavery but saw it as a way to find favor with their slave masters and an opportunity to form social groups with other slaves (Frazier, 1974). Lincoln expounds on Frazier's "Negro" church concept and states that the church transformed into the Black Church where Black religion became the center of social and civic activities.

As historians and Black religious historians have theorized, religion in the lives of African Americans is an integral part of life and also is important and highly associated with health.

Kreuter and several other public health scholars at the Saint Louis School of Public Health (Kreuter, Lukwago, Bucholtz, Clark, & Sanders-Thompson 2003) discussed the merit in tailoring messages with socio-cultural factors like religiosity to make health messages more appealing and also culturally appropriate. The project cited involved creating health magazines with culturally appealing messages to increase mammography and fruit consumption among African American women in Missouri. The dimensions of religiosity were used as part of tailoring behavior change messages. An adaptation of the 2001 National Black Survey study showed that among 300 low-income African American women in St. Louis, Mo., 63% of respondents stated it was necessary for the church to promote healthy lifestyle habits (Haire-Joshu cited in Kreuter et al.,

2003). Religion has also shown to be a significant factor in coping situations among African American women (Brome, Owens & Vavaina, 2000) a motivational force in changing health behavior (Ashwing-Giwa,1999); leads to a healthier lifestyle (King, Burgess, Akinyela, Counts-Spriggs & Parker, 2005) and increases health-seeking behavior (Dessio, et al., 2004).

Black religion has relevance to African American women as they too have traditionally and historically held religious beliefs during harsh treatment and conditions of slavery (Asante & Asante, 1985; Musgrave, Allen, & Allen, 2002).

African American women have been inextricably tied to the church (Asante & Asante, 1985; Zuckerman, 2000) largely consider themselves as religious but also as spiritual beings (Mattis, 2002).

The argument here then is that many African American women view religion as a way to not only cope with many life situations but also as a liberating experience through which they connect with others in their community and coexist. Incorporating facets of religion in advertised health messages may resonate with this audience.

In terms of strategic communication, religiosity has been described as a factor that should be considered when targeting health information to African American women (Kreuter & McClure, 2004; Levin, Taylor & Chatters, 1995). These factors should be considered in communicating health messages to African American women in particular because of the potential to affect advertising attitudes among this group.

The distinction here then becomes how religion and spirituality are two very different concepts in terms of information processing among this group of individuals. Religion involves the communal act of attending church, worshipping with others to serve a higher purpose and could impact how an individual thinks about health and behaves. Religion is the protocol or rules to communicating and reaching God (higher power) and to something that is "good".

Spirituality, an expression of "connecting with good" internally or individual connection with God or higher power may have a different impact as individuals profess to be spiritual but not religious. In this study spirituality may be more interrelated with processing health information as research has shown spiritual beliefs to be highly correlated with health beliefs (Kreuter 2002; Holt et al., 2003).

The concept of spirituality is that it is the "internal" and or intrinsic and may be part of an individual's schema or memory whereas religion is a physical act to access that schema. In the African American culture it is not uncommon for congregants to attend church services out of tradition and as a way to celebrate their heritage. Different than other races and ethnicities, religion for African Americans is closely woven into who African Americans are and defines an outward expression; arguably spirituality defines an inward expression.

The plethora of scientific and qualitative investigations on the role of religion and also spirituality in healthcare also makes this plausible. The resurgence of interest in not only religion but spirituality in medical research (Hufford 2005) necessitates the investigation of spirituality among African

American women as well and how this may impact information processing of health information.

In the present study, the goal was to differentiate religiosity from spirituality and investigate the impact religiosity had in persuasive communication. In addition, the researcher explored the impact spirituality had on the relationship between religiosity and the dependent variables.

Spirituality and health among African Americans

Spirituality, similar to religiosity, is a multi-dimensional construct that has been integral in explaining and predicting health behavior among African American women. As previously stated, it has been defined as a separate concept from religiosity and continues to divide scholars. Seminal researchers such as Allport and Ross (cited in Egbert, Mickley & Coeling, 2004) attempted to explain the differences by categorizing religious people as "the extrinsically motivated person who uses his religion, whereas the intrinsically motivated lives his religion," (Egbert et al., 2004, p. 3). The debate over whether the constructs of religion and spirituality have or do not have overlapping dimensions continues as operational definitions are not clear, are vague and often contradictory (Koenig et al. 2001).

The complexity of defining and differentiating spirituality and religiosity in terms of health has also been a challenge for health researchers predicting behavior intention and should be addressed here. The distinction between spirituality and religiosity could be apparent in this study based on different

effects of the individual's self-expressed spirituality compared to the effect of religion on memory, attitudes and behavior intention toward breast cancer screening advertisements. Opposing outcomes would show the two to be separate constructs.

The spiritual health locus of control is a model that incorporates not only the dimensions of spirituality but also health behavior. In one dimension termed the belief dimension, it is an individual's non-observable activities such as prayer or relationship with God. The second dimension or behavioral dimension is an individual's observable spiritual behaviors such as reading the Bible or worshipping in church (Holt et al., 2003). The second dimension is exemplary of the unique characteristics of spirituality that researchers posit has an overlapping dimension where internality or spirituality leads to behavioral outcomes.

The spiritual health locus of control was developed essentially out of the multi-dimensional health locus of control that incorporates and explains the significance of spiritual beliefs. These beliefs (i.e., health belief dimension) are considered one of the significant dimensions of the health locus of control (Holt et al., 2003).

Holt, Kreuter and Rubio (2003) utilized the spiritual locus of health control as a framework to investigate the association between mammography knowledge, mammography utilization, breast cancer and breast cancer treatment and the multidimensional aspects of spirituality. The study also examined active and passive components of the spiritual locus of health control and how

spirituality is associated with breast cancer and mammography utilization beliefs among African American women.

The participants in the study who were classified as belief-only (belief in getting a mammogram) scored significantly higher than both those who were classified low spiritual and high spiritual; they scored marginally higher than those classified behavior-only as it related to breast cancer treatment knowledge. McBride et al. (1998) also found that individuals with high or moderate levels of intrinsic spirituality had better health than those with low spirituality. Religiosity was conceptualized as part of the multidimensional aspects of spirituality and defined the behavioral dimension or observable spiritual behaviors. These observable behaviors could include reading religious materials and attending church (Holt, et al, 2003).

Another study investigating breast cancer beliefs among urban African American women conceptualized the spiritual health locus of control as having an active and passive dimension, which empowered individuals in their health beliefs, behaviors and a reliance on a higher power (Holt, Clark, Kreuter & Rubio 2003). Women surveyed were asked about breast cancer beliefs and also about their health and belief in God and how that belief applies to their health. The study suggested that the spiritual health locus of control may include an "active" component, where God empowers the individual to take healthy actions but also a passive component where the individual is more apt to rely on God to protect their health rather than taking action themselves. Even though African American women's spiritual health locus of control beliefs were highly endorsed and

positively associated with internality, the active spiritual health locus of control was positively associated with mammography *barriers* and *negatively* associated with mammography *perceived* benefits (Holt, et al., 2003). As spirituality has been hypothesized as being pervasive in the African American consciousness (Thompson & Chambers, 2000), the distinction of these dimensions as it applies to health should be made and may account for why the spiritual health locus of control was positively associated with mammography *barriers* and negatively associated with *perceived* benefits.

The distinction of religiousness and spirituality can be found in Allport and Ross' definitions where people are motivated extrinsically and intrinsically, respectively. Those individuals who are motivated through worship and religious activities may not be as motivated nor have the same beliefs and perceptions as those intrinsically motivated. Fatalism among African American women in particular has been a barrier to breast cancer detection as women feel that God will inherently protect them and do not have to change health behavior (Frisby, 2002; Kreuter, et al. 2003). Many African Americans feel that God is sovereign and ultimately it is his will if an individual will get sick or be healed. However, a qualitative study investigating the spiritualization of health beliefs in multigenerational African American families (King, Burgess, Akinyela, Counts-Spriggs & Parker, 2005) shows African Americans view the connection between health and religion (God) as a "combined agency" where God is working in concert with some other entity such as the doctor and or the individual. Four themes emerged which included: divine healing, divine healing through doctors;

divine healing through health or behavior modification; and acceptance through health modification (King et al., p. 439). These themes eventually were used to create three coding categories that included the sovereignty of God; the spiritualizing of health beliefs as opposed to medicalization of health beliefs and the combined agency of God. The combined agency of God, a viewpoint that indicated some family members saw themselves as partnering with God to take personal responsibility for their health, was essentially a viewpoint taken from the Bible that "faith without works is dead" and focused on personal responsibility. The combined agency is similar to the spiritual locus of health control and its active component but differs as it shows how African Americans view health and spiritual belief beyond a dichotomous view (passive or active spiritual locus of health control).

While a strong belief in God among African Americans concerning health can lead to fatalistic thinking and non- conforming health behaviors, the qualitative study shows that when healthy living or overcoming illness is viewed as God working in concert with other entities, the individual can be successful (King, et al, 2005). In addition, it shows how African Americans can be healthy spiritually by depending on God as the ultimate healer (i.e. divine healer); how God uses doctors to help heal individuals; and how the individual cannot only depend on God spiritually for healing and good health but to religiously follow good health habits and do what the doctor is asking (combined agency).

Thus the researcher makes an argument for conceptualizing religion as a message element as research shows that African American women are religious

and that spiritual beliefs concerning health can lead to health behavior modification.

In sum, the health message with religion could not only be appealing and attractive to low-involved African American women who are spiritual but personally relevant to high - involved African American women who are spiritual. These messages that incorporate religion could help *minimize* mammography barriers and *increase* perceived benefits because of the positive association between religious practice and health. Spirituality also is a natural link to the African American world view and values. It is then plausible that individuals who are highly spiritual may be persuaded by religion in health advertising messages. However, if spiritual beliefs are high this may impede attitude and behavior change in some individuals.

Transmission of Culture through Religious Symbols

Black religion as defined earlier is an important part of African American life. It has historically and traditionally provided an avenue for African Americans to create a sense of self-consciousness, community and to organize socially to address issues (e.g. civil rights). Religion among African Americans is in itself symbolic as the historian Charles Long stated one of the perspectives of Black religion is that the "experience and symbol of God in the religious experience of Blacks," provides a beginning to understanding the practice of religion among African Americans, (Long, p. 25). Religious symbols or sacred symbols such as the cross transcend African Americans into a unique cultural experience. Symbols have been utilized as a way mental images can be physically

manifested even when they are not the mental image being viewed, (Moore, p. 446). For instance, seeing the cross, a religious symbol, could physically manifest feelings of comfort and connect that individual to mental images that relate to religion whether it is a cross, dove or some other symbol.

Symbols provide a way to physically represent images. Black psychologists have identified and theorized how African Americans in particular process symbols when compared to European Americans (Moore, 1996). Scholars theorize in the African tradition the usage of symbols perpetuates a relationship between "material and spiritual planes" (p. 447).

The authors concluded that learning and cognitive styles among African Americans must be considered to support the use of affect-symbolic imagery in knowledge acquisition and thus can apply here where religious symbols are embedded into health advertisements targeting African American women.

An extension to understanding how African Americans process symbols can be integrated with consumer research to further explain the impact of symbols in this study. Several studies in consumer research have investigated cultural symbolism. These studies have focused on how products may have a variety of meanings beyond their functional use (Dotson & Hyatt, 2000). A physical commodity can become a number of meanings through the use of an object in social interaction. An individual's relation to objective reality is mediated by the symbolic environment surrounding such objects and the perceptions of these symbolic associations with products; the symbols in this case may have a profound influence on purchase intention (Dotson & Hyatt, 2000). The intention

in this study would not be the purchasing of an item but behavioral intention and "buying" into the idea of getting screened for breast cancer. The inclusion of a sacred symbol such as the cross may have a strong symbolic meaning for African Americans as the infusion of commodity and symbols create unique cultural experiences.

Advertising Effects

Advertising research is replete with empirical data that investigates causal relationships and the effectiveness of advertisements among consumers.

Further, marketing communication researchers seek to uncover what information influences consumer behavior by focusing on not only the brand but the attitude toward the advertisement. Of particular interest is a body of literature that focuses on consumer's affective responses to attitudes toward the ad (Batra & Ray, 1986; Brown & Stayman, 1992; MacKenzie, Lutz & Belch, 1986); as the dominant research had been primarily attitude toward the brand (Mitchell & Olson, 1981; Shimp, 1981). An examination of attitude toward the ad has led researchers to empirically test the interplay between indirect and direct relationships among concepts such as attitude toward the ad and brand cognition (Shimp, 1981; Biehal, Stephens & Curlo 1992).

Here, the goal was to examine memory for the brand, memory for the brand, attitude toward the brand, attitude toward the ad and how they impacted the relationship between health involvement and persuasive communication targeting African American women.

Memory as a Dependent Measure

The outcome measure of memory is crucial in determining the effectiveness of message strategies designed for health campaigns. Message design research is commonly focused on memory to ensure that that there is an influence on health outcomes (Flora & Maibach, 1990). Recall of information in the advertised message will be an indication of how low-involved and high-involved African American women will process the message, form attitudes and eventually change behavior. It is hypothesized that low-involved individuals will recall breast cancer screening ads with peripheral cues more than breast cancer screening ads with central cues. It is also hypothesized that high-involved individuals will have an equal or greater recall of breast cancer screening ads with central cues than with peripheral cues.

The following hypotheses are advanced:

H1: Subjects' health involvement with breast cancer screening practices will interact with religiosity in health ads to increase memory of the brand.

H1a: Subjects who are highly involved with breast cancer screening practices will have an equal or greater memory of the brand without religious symbols than with religious symbols.

H1b: Subjects who are lowly involved with breast cancer screening practices will have a greater memory of the brand with religious symbols than without religious symbols.

H2: Subjects' health involvement with breast cancer screening practices will interact with religiosity in health ads to increase memory of the ad.

H2a: Subjects who are highly involved with breast cancer screening practices will have an equal or greater memory of breast cancer screening advertisements without religious symbols than with religious symbols.

H2b: Subjects who are lowly involved with breast cancer screening practices will have a greater memory of breast cancer screening advertisements with religious symbols than without religious symbols.

Attitude toward the brand.

The brand in this study was the church (Fellowship Christian Community Church); it concurrently served as the sponsor of a socially marketed product (breast cancer screening) in efforts to empirically test the relationship that religiosity and spirituality had on the subject's attitude toward the brand (i.e. the name of the church).

In advertising research, brand recognition is an important element in the persuasive process as this is an indication of whether the consumer will cognitively process the brand and therefore form a positive brand attitude.

Mitchell and Olson (1981) stated that "advertising researchers consider consumer attitudes to be relatively stable and enduring predisposition to behavior", (p. 318) This view aligns with the Fishbienian view that the attitude of an object will help predict not only behavior but behavior intention (i.e. purchase intention) (Azjen & Fishbein, 1980).

Attitude toward the brand (Ab) in relation to ELM, has been empirically tested where consumers were placed in groups and exposed to both non-comparative and comparative advertisements (Dröge, 1989). Ab was a better predictor of central processing and also supported the ELM's explanation of central processing among high-involved individuals.

The Ab would show and establish a causal relationship between highly-involved African American women and the brand (Fellowship Christian Community Church). This relationship would mean that African American

women who are highly involved with breast cancer screening would cognitively or centrally process the advertisement sponsored by the church without the cross.

Even though Attitude toward the ad or Aad is often used as a mediator in investigating advertising effectiveness, in this study Ab was tested as a direct (link to) on behavior intention (i.e. purchase intention) toward the sponsor. The reasoning was that a large percentage of African American women are highly spiritual and these beliefs were associated with a health product - breast cancer screening. Highly involved women were hypothesized to centrally process this information and therefore the brand for the advertisement. The brand (the church) is associated with the product (breast cancer screening) and thus highly-involved women with their health may be more apt to have a greater attitude toward the brand without the peripheral cue of the cross even though the brand is affiliated with religion. Women who are highly involved with their health will favor the information that is salient and or relevant to them and thus, centrally process this information and favor the brand that sponsors important information.

In addition, African American women who are highly involved with their health will have a greater cognition or brand cognition with the ads without a peripheral cue (the cross) when compared to the women lowly involved with their health; the lowly-involved individual will process peripheral cues and have a greater attitude toward the brand because of the state or mood that the breast cancer screening ad puts them. The name or brand of the church alone with the breast screening product may not be enough to appeal to low-involved women. Thus the following hypotheses are forwarded:

H3: Subjects' health involvement with breast cancer screening practices will interact with religiosity in health ads to increase attitude toward the brand.

H3a: Subjects who are highly involved with breast cancer screening practices will have a more favorable attitude toward the breast cancer screening ad brand without religious symbols than with religious symbols.

H3b: Subjects who are lowly involved with their health will have a more favorable attitude toward the breast cancer screening ad brand with religious symbols than without religious symbols.

Attitude toward the ad.

Attitude toward the Advertisement or A_{ad} is one of the key dependent variables in advertising studies measuring ad response (Shimp, 1981; Dotson & Hyatt, 2000) and is often a mediator of Ab. It also has been seen as an important factor in predicting brand choice among low-involved or individuals who minimally process information in advertisements. Aad specifically measures the affect referral or mood that is engendered when low-involved consumers peripherally process information such as visual or executional (Shimp, 1981) pieces of the advertisement.

A_{ad}, has two dimensions that include a cognitive and emotional dimension which could explain the conscious process by which the consumer cognitively forms an attitude toward the ad when processing information peripherally.

The peripheral cue that has deep meaning, such as a religious symbol, may make a difference in how low-involved women will think about breast cancer prevention. The emotional dimension of Aad is a part of the consumers' affective response to the ad (Dotson & Hyatt, 2000; Shimp, 1981,) where the religious

peripheral cue among low- involved would probably be due to affect – which could lead to possible behavior intention with very minimal processing of the ad.

As religion will serve as a peripheral cue (i.e cross) in the advertising message, it is hypothesized that individuals who are lowly-involved in breast cancer screening will have a more favorable attitude toward breast cancer screening advertisements (or some affect transfer or referral) with the cross than without the cross.

In this study, the aspects of involvement that include cognitive measures and affective measures will be examined to determine what effects they have on information processing among African American women.

With the issue of breast cancer screening, getting screened for breast cancer will depend on the individual's involvement with breast cancer and what perceived risks, benefits and costs the individual anticipates with accepting the message. If the individual is highly-involved with breast cancer screening, then the individual will process information central to the message. The scientific reasoning of why it is necessary to get screened will resonate with the individual and therefore processing will be high and behavior intention likely; however, if the individual is lowly-involved with breast cancer screening, the central cues of getting a mammography will not resonate with the individual and therefore processing of this information will be low. Additionally, if peripheral cues such as religious symbols are present in the message about breast cancer screening, lowly-involved individuals may be more apt to process information in an affective state that could lead to either health behavior change or central processing.

Involvement level with breast cancer screening may have some impact on how African American women process breast cancer screening ads with religious symbols.

The following hypotheses are thus advanced:

H4: Subjects health involvement with breast cancer screening practices will interact with religiosity in health ads to increase attitude toward the ad.

H4a: Subjects who are highly involved with breast cancer screening practices will have a more favorable attitude toward the breast cancer screening ad without religious symbols than with religious symbols.

H4b: Subjects who are lowly involved with their health will have a more favorable attitude toward breast cancer screening ads with religious symbols than without religious symbols.

Behavior Intention as a Dependent Variable

Behavior intention is an indication of the individual's intent to actually change behavior. Azjen and Fishbein (1980) noted that intention is a direct link to behavior change and could predict whether an individual will carry out an action. The individuals' likelihood to get screened for breast cancer was measured as the likelihood that they would obtain information from the sponsor (FFCC or First Fellowship Community Church). It was hypothesized that low-involved women would respond to appealing ads with peripheral cues and have a greater intention to get screened for breast cancer as compared to women who were highly involved with their health. Highly involved women would be more likely to get screened for breast cancer after being exposed to ads without religious symbols. Thus, the following hypotheses are advanced:

H5: Subjects' health involvement with breast cancer screening practices will interact with religiosity in health ads to increase intention to get screened for breast cancer.

H5a: Subjects who are highly involved with breast cancer screening practices will be equally or more likely to get screened for breast cancer after being exposed to breast cancer screening ads without religious symbols than with religious symbols.

H5b: Subjects who are lowly involved with breast cancer screening practices will have a greater chance to get screened for breast cancer after being exposed to breast cancer screening ads with religious symbols than without religious symbols.

Additional Measures

Spirituality as a Moderator.

As indicated earlier, current research states spirituality is highly correlated with health among African American women; in some cases it can be a deterrent to health behavior change as in the case of fatalism but could be a motivator of health behavior change where spiritual belief that God is the healer but heals through the work of doctors and also individual behavior. Spirituality can also be highly correlated with religion (Levin et. al, 1995; Mattis, 2002) where an individual is acting on spiritual beliefs to promote a healthy lifestyle and put faith in God into action (King et al., 2005).

The researcher tested the covariance of spirituality and religiosity to see if spirituality in fact moderates the relationship between health and the dependent variables. The covariance of spirituality in the relationship between religion and the dependent variables could show the correlation of the two concepts. Thus, the following hypotheses are advanced:

H6: Subjects' health involvement with breast cancer screening practices and religiosity in health ads will interact with spirituality level to increase memory of the brand.

H6a: Subjects highly involved with breast cancer screening practices and who are high spiritually will have a greater memory of the brand affiliated with breast cancer screening advertisements with religious symbols than without religious symbols.

H6b: Subjects lowly involved with breast cancer screening practices and who are high spiritually will have a greater memory of the brand affiliated with breast cancer screening advertisement with religious symbols.

H6c: Subjects highly involved with breast cancer screening practices and who are low spiritually will have less memory of the brand affiliated with breast cancer screening advertisements with religious symbols than without religious symbols.

H6d: Subjects lowly involved with breast cancer screening practices and who are low spiritually will have less memory of the brand affiliated with breast cancer screening advertisements after being exposed to ads with religious symbols than without religious symbols.

H7: Subjects' health involvement with breast cancer screening practices and religiosity in health ads will interact with spirituality level to increase memory of the ad.

H7a: Subjects highly involved with breast cancer screening practices and who are high spiritually will have a greater memory of breast cancer screening advertisements with religious symbols than without religious symbols.

H7b: Subjects lowly involved with breast cancer screening practices and who are high spiritually will have a greater memory of breast cancer screening advertisement with religious symbols.

H7c: Subjects highly involved with breast cancer screening practices and who are low spiritually will have less memory of breast cancer screening advertisements with religious symbols than without religious symbols.

H7d: Subjects lowly involved with breast cancer screening practices and who are low spiritually will have less memory of breast cancer screening advertisements after being exposed to ads with religious symbols than without religious symbols.

H8: Subjects' health involvement with breast cancer screening practices and religiosity in health ads will interact with spirituality level to increase attitude toward the brand.

H8a: Subjects who are highly involved with breast cancer screening practices and who are low spiritually will have a more favorable attitude toward the brand without religious symbols than with religious symbols.

H8b: Subjects who are lowly involved with breast cancer screening practices and who are high spiritually will have a more favorable attitude toward the brand with religious symbols than without religious symbols.

H9: Subjects' health involvement with breast cancer screening practices and religiosity in health ads will interact with spirituality level to increase attitude toward the ad.

H9a: Subjects who are highly involved with breast cancer screening practices and who are low spiritually will have a more favorable attitude toward the advertisement without religious symbols than with religious symbols.

H9b: Subjects who are lowly involved with breast cancer screening practices and who are high spiritually will have a more favorable attitude toward the advertisement with religious symbols than without religious symbols.

H10: Subjects' health involvement with breast cancer screening practices and religiosity in health ads will interact with spirituality level to increase intention to get screened for breast cancer.

H10a: Subjects highly involved with breast cancer screening practices and who are high spiritually will have a greater intention to get screened for breast cancer after being exposed to breast cancer screening ads with religious symbols than without religious symbols.

H10b: Subjects lowly involved with breast cancer screening practices and who are high spiritually will have a greater intention to get screened for breast cancer after being exposed to breast cancer screening ads with religious symbols than without religious symbols.

H10c: Subjects highly involved with breast cancer screening practices and who are low spiritually will have a lesser intention to get screened for breast cancer after being exposed to breast screening ads with religious symbols than without religious symbols.

H10d: Subjects lowly involved with breast cancer screening practices and who are low spiritually will have a lesser intention to get screened for breast cancer after being exposed to breast cancer screening ads with religious symbols than without religious symbols.

Spirituality

Spirituality (self-expression) was also hypothesized to have an interaction with religiosity. The following hypotheses are advanced:

H11: Subjects' spirituality level and religiosity in health ads will interact to increase memory of the brand.

H11a: Subjects who are high spiritually will have a greater memory of the brand affiliated with breast cancer screening advertisement with religious symbols than without religious symbols.

H11b: Subjects who are low spiritually will have less memory of the brand affiliated with the breast cancer screening advertisements with religious symbols than without religious symbols.

H12: Subjects' spirituality level and religiosity in health ads will interact to increase memory of the ad.

H12a: Subjects who are high spiritually will have a greater memory of breast cancer screening advertisement with religious symbols than without religious symbols.

H12b: Subjects who are low spiritually will have less memory of breast cancer screening advertisements with religious symbols than without religious symbols.

H13: Subjects' spirituality level and religiosity in health ads will interact to increase attitude toward the brand.

H13a: Subjects who are high spiritually will have a more favorable attitude toward the brand with religious symbols than without religious symbols.

H13b: Subjects who are low spiritually will have a less favorable attitude toward the brand with religious symbols than without religious symbols.

H14: Subjects' spirituality level and religiosity in health ads will interact to increase attitude toward the advertisement.

H14a: Subjects who are high spiritually will have a more favorable attitude toward breast screening advertisements with religious symbols than without religious symbols.

H14b: Subjects who are low spiritually will have a less favorable attitude toward breast screening advertisements with religious symbols than without religious symbols.

H15: Subjects' exposure to religiosity in health ads will interact with spirituality level to increase intention to get screened for breast cancer.

H15a: Subjects who are high spiritually will have a greater intention to get screened for breast cancer after being exposed to breast screening ads with religious symbols than without religious symbols.

H15b: Subjects who are low spiritually will have a lesser intention to get screened for breast cancer after being exposed to breast screening ads with religious symbols than without religious symbols.

H16: Subjects exposure to religiosity in health ads will interact with health involvement and spirituality level to increase brand memory, ad memory attitude toward the brand, attitude toward the ad, and behavior intention.

Chapter 5

Pilot Study

A pilot study was conducted to detect any design flaws before conducting the actual experiment (Bausell, 1994); to ensure valid and reliable measurements of dependent variables; and to quantitatively determine the validity of the manipulation of the religiosity stimuli. To accomplish these goals, two questionnaires were devised (see Appendix A) to measure breast cancer screening involvement and outcome variables.

Pretest of Advertisements

Prior to the pilot study, five acquaintances of the researcher who were not part of the pilot study or the experiment viewed eight advertisements created for the experiment. Three African American women and two African American males participated. The individuals were only told that the researcher wanted them to view some advertisements but were not told anything about the content or physical layout of the ad, etc. to reduce bias.

They were asked to view all advertisements separately and subsequently interviewed. Participants were quarried about their familiarity with the advertisements; if they had ever seen the ads before; and what their general impressions were about the ads. They were also asked about their impressions of the cross in the ads. All agreed that in 6 of the 8 advertisements the cross was noticeable. In one ad the cross and text were difficult to see because of the background, and in a second ad, the participants felt that the couple featured

looked unnatural. Two people specifically commented on the gaze of the couple and felt that the photo did not complement the text.

All five participants agreed that the cross could be considered a natural part of the majority of the advertisements and resembled professional ads in magazines.

The final six were selected because of the following reasons: 1) The cross was noticeable but not prominent in the advertisement 2) The overall theme of the advertisement was consistent among four of five people 3) Three out of five people had favorable opinions of all of the advertisements and 4) Four out of five thought that the majority of the ads were appealing; one individual felt one of the ads was inappropriate for the study. However, this ad was retained because of its naturalistic setting and appeal among the other participants.

In summary, eight advertisements both with and without the cross as a religious symbol, were initially created for the study but only six were used. One ad was removed because it did not resonate with the majority of the five participants, and the background made it difficult to see the text and the cross. A second ad was pulled because the people featured in the ad did not resonate with the majority of the participants who viewed the advertisement. One of the final six advertisements was adjusted to make the cross more noticeable by placing it at the top of the advertisement.

Pilot Study Measures

The pilot study questionnaires were pretested for clarity, comprehension and respondent fatigue. The first questionnaire consisted of 36 items (see

Survey instrument in Appendix A) and included demographic and breast cancer screening involvement and behavior measures. The second questionnaire was given approximately two weeks later and consisted of 25 items. The participants answered these items after each ad. The manipulation check was included in the measures and consisted of one aided recall item. It stated the following:

"Please identify the design of the advertisement that most supported the breast cancer screening message: 1) The Colors; 2) The Cross; 3) The People; 4) The Artwork.

After the 6th ad the participants responded to two additional measures. Those measures included a church attendance measure that consisted of two items and a spirituality questionnaire that consisted of 20 items. In summary, the second questionnaire included post breast cancer screening behavior, church attendance, spirituality and dependent measure items. The dependent measures included memory of brand, memory of the ad, attitude toward the brand (First Fellowship Community Christian), attitude toward the advertisement and behavior intent toward the sponsor. Lastly, participants answered additional behavior intention measures that included intention to seek additional breast cancer screening information and to get screened for breast cancer in the future.

Participants

The pilot questionnaires were distributed to a group of 12 women at a predominately African American church in Marshall, MO. However one respondent's questionnaires were dropped from analysis after the researcher discovered the participant had asked another participant to read and interpret

several questions from the second questionnaire. A total of 11 participants were included in the pilot study sample.

Pilot Study Results

Respondents were between 45 and 68, the age that women are generally targeted to be screened for breast cancer and mammography utilization (ACS, 2000). The majority of respondents had some college or technical education (34%) and had a high school education (34%). The remaining portion of the sample had advanced degrees (9%), a college degree (9%) or less than a high school diploma (9%).

The manipulation check was an aided recall item. The manipulation failed because the item was not representative of the cross/no cross conditions. There were several missing variables for the item (N=36, M=.27, SD=.45) where the memory score for the item was "1" and coded "1" for correct and "0" for incorrect; only six of the respondents attempted to answer the item.

An initial look at the descriptive statistics among the sample showed little variance. The analysis showed the variance was greater for the attitude toward the brand and attitude toward the ad when compared to memory and behavior intention measures. The descriptive statistics included the following: memory of the brand (M=.89, SD=.22); memory of the ad (M=.79, SD=.26), attitude toward the brand (M=4.18; SD=1.25), attitude toward the ad (M=5.40, SD=1.43), behavior intention for the sponsor (M=3.83, SD=.86)

To improve clarity, validity and reliability of measures, the second questionnaire was modified. As a result, the researcher added an additional item to measure brand memory and also modified the aided recall item. The unaided recall item was reworded to state the following: "Do you recall the types of magazines the church is targeting to increase awareness of breast cancer among African America women?" The second item or aided recall item was expanded to include more generic church names in contrast to the First Fellowship Community Church name.

The measure for ad memory was changed to two different aided recall items and another unaided recall item. One of the modified aided recall items included six options that represented each ad theme. The themes included encouragement, cancer odds, spousal support, friendship support, empowerment, and personal well-being.

The attitude toward the brand and attitude toward the ad were also expanded to enhance validity by including specific items pertaining to religion in the ad (see Appendix A). The spirituality questionnaire was also reorganized for clarity however the scale was inadvertently modified to a 5-point Likert scale from a 6-point Likert scale that was used in the pilot study.

The manipulation check was also modified and located at the end of the questionnaire after the 6th ad where the respondent was asked to describe the ads with and without the cross. The ads in the pilot study were counterbalanced but not randomized. This procedure could have created an order effect where participants saw three ads with crosses and three ads without crosses in

succession of each other. The 12 packets were then randomized to avoid this type of effect for the formal study.

In addition to modified measures, one ad in the pilot was pulled for the formal study and another ad was created to replace it. The ad that was pulled featured a young lady sitting in a church pew with the text on a church fan (see Appendix B). The ad was considered to be one that would potentially confound the manipulation of religiosity. For example, this advertisement not only had the lady sitting in the church pew but a cross also appeared in the ad at the top for the cross condition. The ad was replaced by another ad that pictured an African American female doctor holding a chart. The ad was selected because of its professional quality, unique features and potential to avoid confounding the religiosity variable.

Qualitative Methodology

All participants were debriefed and thanked for their time almost immediately after finishing the set of second questionnaires. Following the debriefing of the pilot study, participants were asked a series of questions and also allowed to expound on the session. A majority of the participants stated that they enjoyed the experience; however, one participant said that the experience was a bit tiring. The average time spent viewing each of the ads was less than a minute. The majority (nine people) completed the second questionnaire for all six ads within 45-50 minutes.

Reoccurring themes in the conversations with participants included the inclusion of the cross and how it was something that resonated with them. They

noted that it did not necessarily compel them to think about health or getting a breast self-exam but was appealing.

Discussion and Implications of Pilot Study

This initial study allowed the researcher to test the instrument and subsequently make modifications to the hypotheses, manipulation check and add items to the second questionnaire for the actual experiment. The pilot also allowed the researcher to receive additional feedback about the advertisements and reorganize both questionnaires for clarity and accuracy.

The items in the instrument that were added and or modified following the pilot were included to more adequately measure the dependent variables of memory for the brand, attitude toward the brand, memory of the ad and attitude toward the ad. The additional items were thought to capture cognitive processing of the advertisements in addition to the likeability of the ads. These items also allowed the researcher to modify the hypotheses to establish a pattern for a causal relationship between the independent and dependent variables.

The interviews conducted after the debriefing gave the researcher important contextual cues as to the likeability of the ads. The researcher also gained additional information concerning attitudes toward health behavior and the significance of religious symbols in health advertisements among the

participants. The majority of the women stated the cross had no impact on them to get screened however they did feel an affinity toward the cross.

Chapter 6

Method

Rationale

Since the goal of the study was to test for causality, an experiment was the appropriate method to accomplish this. An experimental design moves beyond correlation analysis conducted with such methods as surveys or regression analysis and allowed the researcher to control for extraneous factors and manipulate the independent variable. This also established the effects of the independent on the dependent variables.

Experimental Design

The research design was a mixed factorial 2 (health involvement) X 2 (religiosity) quasi-experimental design. The health involvement variable served as the between-subjects factor and the religiosity variable served as the repeated measure or within-subjects factor. Spirituality (expression) also served as a covariate in the initial 2 X 2 design but was later statistically analyzed as the between-subjects factor in a 2 (religiosity) X 2 (spirituality) design. Finally, the researcher investigated the interaction of spirituality and religiosity in the analyses.

Religiosity (the manipulated variable) had two levels: with a cross and without a cross, where the cross served as the peripheral cue. Health involvement, the between-subjects factor, was a measured variable that had two

levels, high and low and was measured prior to the exposure of the stimuli to control for a potential bias effect. Subjects were then statistically split at the median to create high-involvement and low-involvement groups for comparison.

Spirituality (expression), the moderator, had two levels, high and low that were measured immediately following the experiment and were later statistically split at the median.

A quasi-experimental design was selected to maximize control in the experimental conditions and also to minimize confounding or spurious variables. Stanley and Campbell (1963) state that true experimental designs are not always appropriate, particularly when the researcher lacks full control over experimental conditions and a single group is a part of the design. The design can also account for such internal validity problems such as history, maturation and morbidity in single-group designs (Stanley & Campbell, 1963). Internal validity threats such as these can be minimized by using comparison groups as the baseline rather than random assignment in the true experiment; the control variable is essentially similar to the target variable (William M.K. Torchim – social research methods.net).

In the present design, random assignment of subjects in this experiment was not possible because the health involvement variable was a factor the researcher measured prior to the experiment and the within-subjects factor was a measure that was counterbalanced. The counterbalancing of treatment conditions also necessitated a quasi-experimental design as all individuals received all treatments but in varying order to avoid confounding treatment order and other

carry-over effects. According to Campbell and Stanley, the Latin-squares utilized in repeated measure designs (i.e., counterbalancing) keeps the main effects such as carry-over bias from contaminating the main effects of the treatment conditions.

Religiosity was the message feature and the within-subjects factor for the following reasons. First, Reeves and Gieger (1994) state that within-subjects design give a "clearer picture of treatment effects" (p. 174). Other advantages of within-subjects designs are ecological validity and power. Reeves and Gieger argue that this design increases ecological validity because it is a replication of what the subject would see in the real world. Finally, each individual serves as his or her own control group and message processing in experiments such as this study could show larger individual differences in levels of measures (Reeves & Gieger, 1994) as compared to a between-subjects design.

Stimulus Materials

Two versions of six advertisements were created to control for carry-over effect (for a justification, see design in Figure 5 below). Each ad created was to include a cross and no cross condition.

Figure 5. Counterbalance Design. Each row represents one packet.

1C	2C	3C	4 NC	5NC	6 NC
6C	1C	2C	3 NC	4 NC	5 NC
5C	6C	1C	2 NC	3 NC	4 NC
4C	5C	6C	1 NC	2 NC	3 NC
3C	4C	5C	6 NC	1NC	2 NC
2C	3C	4C	5 NC	6 NC	1 NC
1 NC	2 NC	3 NC	4C	5C	6C
6 NC	1 NC	2 NC	3C	4C	5C
5 NC	6 NC	1 NC	2C	3C	4C
4 NC	5 NC	6 NC	1C	2C	3C
3 NC	4 NC	5 NC	6C	1C	2C
2 NC	3NC	4 NC	5C	6C	1C

In addition to the above-noted controls, the advertisements were counterbalanced in 12 packets where treatment order was randomized (Figure 7). For example, one group of individuals saw one set of advertisements with and without a cross in a randomized order while another group saw another set of advertisements with and without a cross also in randomized order. The idea was to at least partially balance the design so that every ad was seen in every nth position, both with a cross and without a cross. For example, Ad1 was seen by different subjects first, second, third and so on both with and without a cross. Ad2 was seen by different subjects first, second, third and so on both with and without a cross, etc. This enabled the researcher to draw conclusions about the manipulated variable, religiosity as manipulated by the symbol of the cross or no

cross treatment, and rule out for the possibility that something inherent in the ad and not the manipulation influenced the results.

Figure 6. Randomization 6 ads in 12 packets. Each row represents one packet.

4C	5NC	3C	6 NC	2C	1 C
6C	2C	5NC	4 NC	1 C	3 NC
6C	3NC	1C	2 NC	4 NC	5 C
3NC	5C	4C	1 NC	6 C	2 NC
2NC	6NC	5C	1NC	4C	3C
2C	4C	1NC	6NC	3C	5NC
4C	2NC	3 NC	1NC	5C	6C
3C	1NC	6NC	4C	5C	2NC
4C	2C	1NC	6NC	5NC	3C
5NC	1C	6NC	2C	3C	4NC
5NC	4NC	2C	3NC	6C	1C
6C	4NC	5C	3NC	1C	2NC

The sponsorship (the church) was not a part of the ad itself but was read in the directions prior to exposure to the ads and will be further discussed (procedures section). A professional graphic artist was paid to create the final ads, shown in appendices B and C.

Advertisements were initially collected from magazines that target African Americans including *Essence* and *Ebony* magazines. While the ads served as the basis for the stimulus materials, many of the ads did not contain health information and were not, in fact, about health. Therefore, it was important to collect additional health-oriented information specific to breast cancer to alter the ads to reflect the purpose of this study. The researcher did this by collecting ads, brochures, etc. from the American Cancer Society website and directly from the ACS. This information was subsequently used and re-written as part of the

existing ads from the magazines and ACS brochures. This process was important for three reasons: 1) By drawing on existing ads, external validity is increased; 2) By manipulating those ads with "real" information (i.e., facts about breast cancer), it increases internal validity; and 3) By using real-world ads, it increases the odds of resonating with the audience to whom the ads were originally targeted.

In summary, there were a total of six breast cancer screening advertisements (ads with and without a cross) in 12 packets where individuals saw all six ads but only viewed three ads with crosses and three ads without crosses. The ads had six different overall themes that were pre-tested with acquaintances of the researcher to account for clarity of message and six distinct breast cancer screening (themes) messages in the ad.

Independent Variables

Religiosity. Religiosity had two levels, presence/absence and was a within-subjects factor. Religiosity was defined as a symbol of an external act of worship with a higher being and "an organized system of beliefs, practices, rituals, and symbols designed to facilitate closeness to" a higher being and to "foster an understanding of one's relationship and responsibility to others living together in a community," (Koenig, p. 18, 2001).

The within-subjects variable was manipulated with the symbol of the cross.

When religiosity was present, the cross appeared in the ad and was coded as

"1". When religiosity was absent, the cross was not present and was coded as "0". In addition each ad was labeled by its theme and given a number of 1, 2, 3 and so on until the 6th ad.

Health involvement. The health involvement variable was defined as an individual's cognitive and affective response to breast cancer screening and the salience and/or relevance of breast cancer screening and topic of breast cancer in message processing. In efforts to test the ELM and HBM, it was operationalized as an individual's perceived benefits, barriers, personal relevance and interest, susceptibility and severity to breast cancer screening on a 5-point Likert-type scale.

Health involvement was a between-subjects factor and was split at the median to create a high/low grouping variable. The group comprised of 48% (174) of low-involved participants and 51% (186) in the high-involved group.

An individual who was high in her breast cancer screening involvement would choose the following item, "having a mammogram will help me find breast lumps early." An individual who was low in breast cancer screening involvement could select the following item, "I am afraid to find out something is wrong when I have the mammogram." Mammography knowledge was also included in the health index and was measured to assess the perceptions of what mammograms can do (Holt, Lukwago & Kreuter, 2003). The items included a yes/no/not sure response format (however the scale was collapsed into a yes/no format for recoding) where mammography knowledge was assessed with four items on a 3-point scale that ranged with questions asking whether "participants thought that

having a mammogram could reduce their risk of dying from breast cancer," (Holt et al., 2003).

To create the health involvement index, items measuring mammography knowledge, attitudes and beliefs toward breast cancer screening were included. A total of 28 items were factor analyzed to create a total score. An exploratory factor analysis of the health involvement scale, using varimax rotation for correlated items revealed five factors. A factor analysis of three and four factors was also conducted however the complete variance explained was low (see Table 5).

Benefit Screening. Four items highly loaded on this factor that measured the perceived benefits of breast cancer screening. This is in accordance to the HBM where perceived benefits is an indication of an individuals' belief in whether a breast cancer screening is beneficial (Champion & Scott, 1997) (α = .78).

Barrier Screening. Four items highly loaded on the factor for barrier to screening that measured the barriers or negative perceptions of breast cancer screening. This is in accordance to scales that have shown negative attitudes toward mammograms (Diamond et al., 2005) and the barriers to BSE and mammograms (Champion et al., 1997)(α = .71).

Screening Relevance. Five items highly loaded on this factor that measured personal relevance and interest to breast cancer ($\alpha = .59$).

Perceived Severity. Two items highly loaded on this factor for worry about the threat of cancer and also the threat of a mammogram. One item was dropped from the analysis to increase reliability however. The item of "I worry about

getting breast cancer (blank)" was thought to be directly related to worry. The factor was then recreated into a single factor ($\alpha = .53$).

Barriers to Action. Three items highly loaded on this factor. The items included were "If I eat a healthy diet, I will lower my risk of getting cancer far enough that I probably do not need to have a mammogram," and "mammograms have a high chance to leading to breast surgery that is not needed." A third item was initially included but was dropped to increase reliability (α = .57). "I would probably not have a mammogram unless I had some breast symptoms or discomfort," was dropped from the analysis but was the one item that most represents a cue to action that the HBM specifies.

In an additional analysis, the researcher conducted an exploratory factor analysis with 27 items; one item from the initial analysis was dropped. The second analysis with the highest percentage of total variance yielded a five-factor solution in which the first factor was the strongest; subsequent factors in this solution were weaker as compared to the first exploratory factor analysis using principal components analysis. Ten items highly loaded on the first factor and were then used to represent the health involvement variable for the experiment. It was reasoned that these items more accurately operationalized the concept of breast cancer screening benefits (α = .87) and thus health involvement with breast cancer screening.

Moderating Variable

Spirituality. Spirituality was defined as an individual's internal and existential connection with a higher being (God) and "personal quest to seek

understanding and meaning about life to the sacred or transcendent which may lead to religious rituals and the formation of community,"(Mattis, 2000; Koenig, 2001).

Spirituality was the moderating variable. It was operationalized as an individual's personal experience with God and satisfaction with life and a relationship with God on a 5-point Likert scale. The scale included 20 items that ranged from strongly agree to strongly disagree (Ellison & Smith, 1991). An individual who scored low on spirituality would select items such as "I don't know who I am, where I came from, or where I am going," "I don't get much personal strength and support from my God," and "I don't find much satisfaction in private prayer with God." An individual who scored high on spirituality would select such items as "I believe that God loves me and cares about me," "I feel that life is a positive experience," and "I have a personally meaningful relationship with God."

The moderating variable was also investigated as a between-subjects factor that was split at the median to create a high/low grouping variable to investigate its interaction with religiosity and the outcome variables.

In subsequent analyses, the researcher conducted an exploratory factor analysis of the spirituality scale as researchers have indicated that the validity of the Spiritual Well-Being Scale is stronger among ethnic populations such as African Americans when used as a five-factor scale rather than a two factor scale when compared to Caucasians (Miller, Fleming & Brown-Anderson, 1998). The researcher in this study dropped item 2, "I don't know who I am, where I came from, or where I am going," from the scale and subsequently conducted an

exploratory factor analysis by using principal axis factor analysis that resulted in a five factor solution as the strongest factor solution compared to the three, four and six-factor solutions. This solution explained the most variance and also was representative of the RWB (religious well-being) and EWB (existential well-being) dimensions of the SWBS (spiritual well-being scale). The first factor, the most representative of religious and existential well-being (α = .82) dimensions, was then used to create a total score and a median split for the high and low spiritual groups used in the second analysis.

Manipulation Check Item

A manipulation check item was included to determine if subjects noticed the ads with and without crosses. The item was presented as the following: "In the six advertisements that you just viewed, please indicate which ads had the symbol of the cross and which did not."

The subjects were initially given one point for every ad that they were able to recall, however a large percentage of respondents recalled the *number* and did not describe the ad itself. The score was reduced to a 3-point score to account for the maximum of 3 crosses recalled in 3 ads. The researcher reasoned that the subject that recalled a *specific* number of crosses in the ads was also stating that they did *not* see crosses in the remaining ads. In summary, subjects that recalled 5 or 6 cross/no cross exposures correctly received a score of 3; subjects that recalled 3 or 4 received a score of 2; subjects that recalled 2 or less received a score of 1; and subjects who wrote "do not recall or remember"

received a score of 0. Those individuals who did not write anything were treated as missing.

Dependent Variables

Memory for the brand. Memory for the brand was defined as the activation of associative links that individuals access (cognitively process) when recalling information about the brand (Anderson, 1983; Rodgers, 2003;). Memory for the brand was measured with one unaided and one aided recall item.

Individuals were first asked to recall the types of magazines the church (brand) targeted to increase awareness of breast cancer among African Americans. This was an unaided item. Subjects received a score of "1" if correctly recalled and a score of "0" if incorrectly recalled. Second, they were asked to select the correct brand out of a list of seven brand names (church names) as to reduce the likelihood of practice effects (Cameron, 1994; Rodgers, 2000). The same scoring applied. The total score for memory of the brand was "2" where most individuals recalled the brand only when given the list of brand names (M = 1.08, SD = 0.67).

Memory for the ad. Memory for the ad was defined as the activation of associative links that individuals access when recalling information about the ads (Anderson, 1983; Rodgers, 2003). It was measured with one unaided recall item and four aided recall items. First, individuals were asked to write down characteristics of the advertisement just viewed. Second, subjects were asked to select the attribute that best supported the ad (six themes to correspond to six ads). Third, subjects were asked to identify the design of the advertisement that

most supported the breast cancer screening message. Fourth, subjects were asked to select the symbol that they recalled from the ad. They were given the name of four symbols in a multiple choice format. Fifth, subjects were asked which symbol was associated with the ad. Memory for the ads was higher than memory for the brand (M= 3.34, SD = 1.06).

Attitude toward the brand. Attitude toward the brand was defined as evaluative processing of the brand that sponsors the ad (Rodgers, 2003). It was measured with one, 5-point semantic differential scale α =.88. Most had a favorable attitude toward the brand (M = 3.77, SD = 0.90).

Attitude toward the ad. Attitude toward the ad, or A_{ad} , was defined as the affective and cognitive processing of the advertisement (Biehal, Stephens & Curlo, 1992; Shimp, 1981). A_{ad} was measured with two separate scales. First, Shimp's measure of A_{ad} was used to assess the affective component of A_{ad} with three items from a 7-point Likert scale. Second, the cognitive processing component was measured using Laczinak and Muehling's (1994) measure of ad message involvement where individuals rated ads on a 7-point Likert scale. Most respondents liked the ads and rated them as favorable (M= 5.1, SD = .90), α = .73.

Behavioral intent for the sponsor. Behavioral intent for the brand was defined as the relevant linkage of an individual's attitude to behave or perform a specific behavior relative to the brand. Behavioral intent for the brand was measured with five items on a 5-point Likert-type scale ranging from (1) unlikely to (5) very likely. Subjects were not very likely to take additional steps to learn

more about the sponsor or seek out additional information (M= 2.97, SD = 1.18) α = .88.

Pretreatment Measures

Behavioral intent for breast cancer screening. Behavioral intent for breast cancer screening was broadly defined as any changes in behavior that individuals take action to do with regard to breast cancer. Behavioral intention has been suggested as a good predictor of behavior (Fishbein & Azjen, 1975); as intermediate in the hierarchy of media effects (Flora and Maibach, 1990); and is not only a personal prediction to behavior predictions, but is a dependent measure stronger than attitudes or knowledge outcomes (Kirby, Ureda, Rose & Hussey, 1998). The desire for more information has also been posited to be one level in the hierarchy of outcome effects that is more advanced than attitude or knowledge change (Kirby, et. al, 1998; McGuire, 1989).

Two behaviors that were of interest included seeking out additional breast screening information (M = 3.11, SD = .86) and obtaining a breast cancer screening.

Additional Measures

Control Variables.

All attempts were made to control for possible confounding variables.

Three demographic variables including age, income and education and one variable of church attendance and participation were analyzed for correlation.

These variables were measured to control for a potential confound where message elements extraneous to the source might operate individually or in

tandem with the IVs to influence the dependent variables. These four controls included: church attendance, education, age and income. The items were measured as follows: church attendance was measured with two items on a 5-point Likert scale. Subjects were also asked whether they had seen the ad before. Education and income were measured in terms of categories and were included as variables to account for varying results among participants with different educational and economic backgrounds.

Participants

A total of 65 women were recruited to participate in the formal study. All participants that were asked to participate were of African descent (African American) and were female.

Participants sampled were from an educational psychology course, residential life, and a predominately African American graduate student group at a large Mid-Western university; predominately African American churches in Columbia, MO, Lexington MO, Marshall, MO, Sedalia, MO and Warrensburg, MO; service organizations including Delta Sigma Theta, Inc.; Columbia Public Health Department and Granny's House not-for profit organization where they were assigned to treatment conditions in the study. The researcher left flyers with leaders of organizations, church pastors, posted solicitation for the study in church bulletins and dormitories and also made brief announcements at church services. The researcher also mailed solicitations for participation in the study and made follow up calls after solicitations had been mailed and distributed.

Three individuals did not report to the study site and two surveys were dropped from the sample because half of the data were missing. This left a total sample size of 60.

The convenience sample of subjects were told that they were participating in a study investigating health beliefs held by African Americans and that their opinions were needed concerning promotion materials being created by a church. They were also informed that they would receive \$30 after completion of the study for their time. To increase the inducement for participation, subjects were told that they would be eligible for a \$150 or \$75 gift certificate to a local mall. Two names were randomly selected by statistical random selection (SPSS) from the sample and those individuals were contacted after data collection was completed. The study was approved by the campus Institutional Review Board; it was also in adherence to the American Psychological Association ethical standards for the treatment of participants (see APA, 2002).

A summary of demographics and descriptive statistics can be found in Table 6.

Age. Women who were 50 fell into the second highest percentage of participants in the study. Ages ranged from 18 to 69, and the mean age was 44 (SD =13.33). The mean age is close to the age that physicians and medical personnel advise women to get mammograms (ACS). The National Cancer Institute, health researchers and other cancer organizations emphasize the importance of getting a mammogram at 40. Women over 40 are oftentimes at an even higher risk for nonparticipation in mammography screening (King, et. al,

2005) and African American women under 30 are now being diagnosed with more aggressive forms of the cancer (NCI, 2006).

Education. The majority of participants (41.7 %) had at least some college or technical school training, 18.3 % had graduated from college, another 18.3% graduated from high school, 13.3 % had advanced degrees and 8.3 % had less than a high school education. These statistics suggest a well-educated sample and could suggest that more educated women are willing to participate in studies such as this one.

Income. The range most representative of income was between \$25,000 and \$34,999(13.3%); however the majority of participants made \$50,000 (28.3%) and above. The remaining participants made \$35,000 to \$49,999 (22%), 15% made \$15,000 to \$24,999 and 17% made \$10,000 and below.

Procedure

The women who agreed to participate in the study convened in six locations. The study consisted of two sessions and ran for three months, beginning in March 2007 and ending at the end of May, 2007. Participants sampled from the community convened at a community center or church and participants sampled from the university convened at a designated location at the university where they filled out the consent form and demographic information following an introduction and instructions for the session. After demographic and pre-measures were completed, participants were thanked for their time and told to come back in a week. In some cases individuals were not able to come back within a week and returned in two or three weeks. In addition, there were five

individuals in Columbia, MO, 12 individuals in Lexington, MO, and three individuals in Warrensburg, MO who were surveyed over the phone for the first part of the study.

When participants came back for the second time, they were welcomed and instructed where to sit in the testing room. They were then given instructions for the examination of the packets. Participants were informed that they would be asked their opinions about the design and appeal of the advertisements created by First Fellowship Community church. Participants were then exposed to a packet of six breast cancer screening advertisements with central and peripheral cues, asked to answer questions that measured the dependent variables. The packets were administered to participants where the order of the advertisements in the packets was counterbalanced. After viewing each advertisement, participants were instructed to fill out a questionnaire and complete aided and unaided recall measures about the advertisements and the sponsor; attitude toward the ad; attitude toward the sponsor; and behavior intention items. After completion of these measures, the subjects were then instructed to fill out additional measures to assess their level of spirituality by using the Ellison and Smith Spirituality level Scale (1991) and also breast cancer screening involvement scale (Diamond, 2005 & Champion & Scott, 199). Following these measures the subjects were debriefed, interviewed and thanked for their time. Debriefing

Qualitative Methodology

After completion of the second questionnaire, all 60 participants were thanked for their time and informed about the true nature of the study. They were also briefly interviewed following the debriefing. The interview was conducted for three reasons: 1) feedback about the formal study 2) contextual information that may complement the quantitative methodology and 3) information for future research.

The researcher began with a set of questions and ended by asking the participant if they had anything else to add. All attempts were made to interview each individual in a separate location from the other participants. This was done to provide a comfortable environment to discuss their involvement and experience in the experiment. The researcher essentially asked the first question and the participant answered the question and was free to expound on that answer. If the participant did not expound on the first question, the researcher then asked the second question in a set of prepared questions (see survey instrument below).

There was a total of 15 sessions over a period of three months that participants were interviewed. Each interview lasted approximately 5 to 10 minutes and was not tape recorded; however, the researcher typed comments in a laptop computer as the participant answered questions. Some interviews ran longer because there were no other participants in the session. The participants in these sessions were generally more comfortable with talking in-depth about the study and providing feedback. At the conclusion of the interview the

participant was thanked again and offered further information about obtaining results from the study.

Survey Instrument

A questionnaire was administered one week prior to the experiment that captured demographic information and health involvement measures. This was done to establish a baseline measure of the above-noted variables to serve as a pre-test to assess the extent to which these scores shifted as the result of the manipulations (i.e., the religiosity cue). A post-measure was also taken after exposure to the treatment that included health involvement; the remaining dependent variables were also taken at this time that included the following: memory of the brand, memory of the ad, attitude toward the advertisement, attitude toward the brand and behavioral intent toward the sponsor. The demographic items of age, education, marital status, and income were recorded on the first questionnaire. Subjects were asked to record their age and asked to indicate their educational level that included the following: less than a high school diploma, high school graduate, some college or technical school, college graduate, advanced college degree. Subjects were also asked to select their total household income that ranged from below \$10,000; \$10,000-14,999; \$15,000-24,999; \$25,000-34,999; \$35,000-49,999; \$50,000 and above. The average participant was 44 (M= 44.05); made an average income between

\$25,000 and \$34,999 and had at least some college or technical school education.

Health Involvement.

The majority of items were taken from the Diamond, Fernandez,
DiClemente, Perz, Rakowski and Vernon (2005) mammography screening scale
and included 16 items using a 5-point Likert scale ranging from (1) strongly
disagree to (5) strongly agree.

Two items were taken from Champion and Scott (1997) to add BSE (breast self exam) questions and four items from an involvement index (Kirby et al. 1998) to measure perceived susceptibility, current mammography information seeking behavior, and personal worry about breast cancer. The 16 items from the Diamond et al. scale included: "People close to me will benefit if I have a mammogram," "Mammograms are helpful if you have one every year," "Mammograms are necessary even when there is no history of breast cancer problems in a family," "A mammogram will find breast lumps early," "Having yearly mammograms will increase my chances of surviving if I get breast cancer," "When I get mammograms I don't worry so much about breast cancer," "If I have a breast exam from a doctor or nurse, I don't need to have a mammogram," "Mammograms have a high chance of leading to breast surgery that is not needed," "Once you have a couple of mammograms that are normal, you don't need to have any more for a few years," "I would probably not have a mammogram if my doctor expressed even a little doubt about whether I really needed one," "If I eat a healthy diet, I will lower my risk of getting cancer far

enough that I probably do not need to have a mammogram," "I would probably not have a mammogram unless I had some breast symptoms or discomfort," "If a mammogram finds something, then whatever is there will be too far along to do anything about it anyway," "Mammograms are not trustworthy because some facilities are better than others."

Health involvement was also measured with breast cancer screening belief scales from Champion & Scott (1997) and involvement items from Kirby et al. (1998). These included eight items on a 5-point Likert-type scale. The eight items included two perceived barrier items; one perceived susceptibility item; three personal relevance and interest items; and two benefit to getting a mammogram items.

The phrases of "I am afraid to find out something is wrong when I have the mammogram," and "Having a mammogram would expose me to unnecessary radiation," were statements that measured perceived barriers and were selected from a 5-point range from very likely/very unlikely. The single item that measured perceived susceptibility was a phrase that included "I think I am (blank) to get breast cancer during my lifetime." The personal relevance and interest items were measured as follows: "I read about or talk about breast cancer (blank)," and "I worry about getting breast cancer (blank)," were rated on a range from almost every day/almost never. The last item, "Breast cancer is personally (blank to me)," was rated on a range from very important/not important at all.

Moderating Variable

Spirituality. Spirituality was measured to assess an individual's self-expression of an interconnection with God and satisfaction with life (Koenig, 2001; Ellison & Smith, 1991) and how this would impact the interaction between the independent variables of religiosity and health involvement on the dependent measures.

Spirituality was measured with 20, 5-point Likert-type scale items which ranged from strongly agree/strongly disagree and included: "I don't find much satisfaction in private prayer with God," "I don't know who I am, where I came from, or where I am going," "I believe that God loves me and cares about me," "I feel that life is a positive experience," "I believe that God is impersonal and not interested in my daily situations," "I feel unsettled about my future," "I have a personally meaningful relationship with God," "I feel very fulfilled and satisfied with life," "I don't get much personal strength and support from my God," "I feel a sense of well-being about the direction my life is headed in," "I believe that God is concerned about my problems," "I don't enjoy much about life," I don't have a personally satisfying relationship with God," "I feel good about my future," "My relationship with God helps me not to feel lonely," "I feel that life is full of conflict and unhappiness," "I feel most fulfilled when I'm in close communication with God," "Life doesn't have much meaning," "My relationship with God contributes to my sense of well-being," "I believe there is some real purpose for my life." Manipulation Check

The measures that were used to assess whether religiosity or the cross as a peripheral cue was successfully manipulated was completed with one measure. After exposure to the ads, the participants were asked to write which ads had the cross in them and which did not. The manipulation check was successful; 48 % correctly identified 3 or 4 cross/no cross conditions correctly, 25% correctly identified 2 or less and 17% correctly identified 5 or 6.

Dependent Variables

Brand memory. One unaided recall and one aided recall item were included in the measure. If the brand was recalled correctly, participants received a "1", if incorrectly recalled, participants received a "0" (Rodgers, 2000).

Memory measures were taken first to assess how well individuals recalled information from the advertisement. Measurement of free recall responses of the sponsor and characteristics in the advertisement were measured first followed by cued recall to reduce practice effects (Rodgers, 2000; Cameron, 1994). This allowed the researcher to more adequately measure what subjects remembered about the advertisement and also if the sponsor was identified. Only 32 % recalled information about the brand when asked to provide what types of magazines the sponsor was targeting; however when provided with a selection of brand names, 80 % recalled the name of the brand.

Ad memory. A memory measure with four recall measures was taken to assess memory for the advertisements (see dependent variables).

In addition, each advertisement that the subject recalled with the cross as a characteristic received a "1"; any other characteristic not pertaining to the cross

received a "0". The responses were then summed for a total recall score for each individual where the total score summed to 4.

Attitude toward the brand. The sponsor was rated on six, 5-point semantic differential scales including: The items included credible/not credible, good/bad, likeable/not likeable, believable/not believable, favorable/not favorable and trustworthy/not trustworthy.

Attitude toward the advertisement. Individuals rated each ad on 8, 7-point Likert scale items including: bad/good, negative/positive, not favorable/favorable, not credible/credible, trustworthy/not trustworthy, no religious angle/religious angle, made me think of religion/did not make me think of religion, did not contain religion/did contain religion (Muehling, 1987).

One additional four-item, 7-point Likert scale was used to determine message involvement with the advertisement. The statements included: "I paid attention to the content of the ad," "I carefully read the content of the ad," "When I saw the ad, I concentrated on its contents," and "I expended effort looking at the content of this ad."

with five items that measured the associative linkage that the individual had of the sponsor being associated with getting screened for breast cancer. They were stated on the questionnaire as the following: "What is the likelihood that you would like more information about church in this ad?" "What is the likelihood that you would recommend that your church sponsor a similar type of advertisement?" "What is the likelihood that you would like to seek out additional

information about the church in this ad?" "What is the likelihood that you would like to visit the church's website (the church in the ad)?" "What is the likelihood that you would donate money to the church in this ad to support these efforts?" (Rodgers, 2003; Chen & Wells, 1999).

Additional Measures

Prior mammography screening/utilization.

Prior mammography screening/utilization was measured with two items that asked the subject when she had her last mammogram and did a BSE. Both mammography utilization and BSE items were coded as 1 – recently to 6 months ago; 2 – Between 6 and 12 months; 3 – Between 12 and 18 months; 4 – Between 18 months and 2 years; 5 – Between 2 and 3 years ago; 6 – Between 3 and 4 years; 7 – 4 years of longer; 8 – Not sure; 9 - Never.

Behavioral intent for breast cancer screening. Behavioral intent for breast cancer screening was measured with two items that measured information seeking and intention to get screened for breast cancer.

The behavioral intention of information seeking was measured using a single item where subjects rated how often they paid attention to breast cancer information in the media on a 4-point scale that ranged from (1) not at all to (4) a lot (Leshner, Cheng, Song, Choi & Frisby, 2007). The intention of obtaining a breast cancer screening was measured using a single item that was coded as the following: 1 – Within the next few days or weeks; 2 – Next month or within the next few months; 3 – Within the next six months; 4 – Within the next year and; 5 – Not sure (Altpeter, Mitchell & Pennell, 2005).

Church attendance was measured with two items that included "How often do you usually attend religious services?" and "Besides regular service, how often do you take part in other activities at your place of worship?" (Levin, Taylor & Chatters, 1995).

Participants were also asked whether they had seen the ad before so as to control for familiarity with the ad and was measured with an item of yes/no/not sure.

Qualitative Methodology

In a brief interview following the debriefing, the researcher asked the initial question about the study and proceeded to ask additional questions if the respondent did not expound on the first question. The questions included the following:

- Could you tell me some of your first impressions about the advertisements?
- 2) Are there any features that stand out more than others?
- 3) How well could you identify with the advertisements?
- 4) What is your reaction to the religious symbols in the advertisements?
- 5) What is your reaction to the advertisements without the religious symbols?
- 6) Are there any other religious symbols that would resonate with African American women in general?
- 7) How likely do you think that you would see an advertisement like this in *Essence* or *Ebony* magazine?
- 8) How likely would you see this advertisement in any other magazine?

- 9) When you saw the ads, how did they make you feel?
- 10) Are the advertisements helpful?
- 11) What do you believe would enhance breast cancer screening ads targeting African American women?
- 12) Any other thoughts about the advertisements?

Several participants answered questions from the preceding list without being asked. However, the researcher attempted to ask questions 1, 2, 4, 6, 7, 11 and 12 if the participant did not discuss them.

CHAPTER 7

Results

Analysis

The statistical procedure used was a mixed-design analysis of variance (ANOVA) that included one repeated measure for religiosity (no cross/cross) and one between-groups factor (health involvement). Spirituality (total score) was also included as a covariate in the initial analysis and later substituted for health involvement (spirituality level) as the between-groups factor with the repeated measure of religiosity.

Statistical analysis for one-way ANOVAs, ANCOVA and *t*-tests are outlined below. The sample size was collapsed from a total of 360 to 60 to analyze the data. The total degrees of freedom decreased (N = 360 to N=60) where each individual counted as six individuals because of the repeated measure of cross/no cross conditions. All analyses were conducted using SPSS for Windows, Base 15.0 and SPSS Windows, Base 13.0 Grad Pack (SPSS, 2006; SPSS, 2004). For all statistical analyses, the probability level was .05 to avoid a Type I error.

Counterbalance Check

In addition to counterbalancing the 12 packets of ads, an ANOVA was run to confirm whether there was an order effect among the packets distributed. No group differences were found for any of the dependent variables.

Manipulation Check

A dependent samples t-test was performed to see whether the manipulation check on the cross/no cross conditions was successful. The analysis revealed that the manipulation was successful (p<.001); descriptive statistics also showed that 65% recalled at least 3 or more cross/no cross conditions correctly.

Controls

A series of paired *t*-tests, ANOVAs and ANCOVAs were conducted to determine whether there were significant differences among the dependent variables and the control variables.

One-way ANOVAs of age did not show a difference between high and low-involved groups nor did Pearson correlations of income and church attendance with the dependent variables. As to be expected, income and education were highly correlated (r = .529); church attendance and income (r = .349) and church attendance and age (r = .378). Education was the only demographic variable that was highly correlated with two dependent variables in both conditions which included memory for the brand with no cross (r = .361); memory for the brand with a cross (r = .316); and memory of the ad with no cross (r = .258).

A paired *t*-test showed that two items measuring church attendance appeared to differ when compared separately to the total score of spirituality;

attending church was highly correlated to spirituality (church attendance, r = .26, t (.04)); church activities was not (r = .210, t (.107)). However, a total score of church attendance was positively correlated with the total score of spirituality (r = .260, p <.001) and was further investigated. ANOVA did not reveal any significant differences when church attendance/activities were entered as a covariate. ANCOVA did reveal a slight interaction effect between religiosity and health involvement but it only *approached* significance when the covariates were entered (F (1, 58) = 3.81, p=.056).

Advertisement Check

In this study, the advertisements included were created to reflect ads printed in mainstream magazines. This was done to increase external validity of the study. The check was successful as 89% stated they had never seen the ads before and only 1.4% stated they had seen it prior to the study; 9.6% indicated that they were not sure if they had ever seen the ad before

Assumptions Tested

Prior to hypothesis testing, the data were examined for missing variables, and assumptions of normality. The General Linear Model (GLM) was used where univariate ANOVA was employed to test the effects of independent variables on the dependent variables of interest. The first step was to run the Levine's Test of homogeneity to test the error variance of the dependent variables across the groups; this assumption of homogeneity of variance for all groups was met but not across all dependent measures. Generally the F test is a robust test for validity against mild lack of homogeneity (Prophet StatGuide at

www.basic.northwestern.edu). This statistical finding is not an isolated case as there are several variables including the independent variables and levels within those independent variables that must be equal across the groups (Keppel & Wickens, 2004). The type I error rate associated with repeated measures ANOVA is designed to avoid the violations of this assumption.

Further examination of histograms, box plots and normal Q-Q plots showed that high and low-involved groups had similar means even when spirituality was entered into the analysis as a covariate (See Appendices). Additional exploratory data showed that assumptions of normality and homoscedasticity were met however after a repeated measure for ANOVA was employed. Following this analysis, there appeared to be a normal distribution of scores about the reference line however observation of independence may have been violated when data were collapsed to analyze data.

Power Analysis

After assumptions were met, a power analysis was conducted for all hypotheses that called for repeated measures. The average observed power was η^2 = .86 for main effects. For the interaction of religiosity and health involvement with spirituality as a covariate, (spirituality X religiosity main effect) it reached significance at (p <.01). The high scores of the power statistics were to detect any differences between groups (Keppel & Wickens, 2004).

Effects of Religiosity and Spirituality

In the literature it was argued that there was a difference between religiosity and spirituality and that the two concepts were in fact distinct. To

confirm this, the reader will recall that spirituality was added to the initial analysis as a covariate. The measure was comprised of 20 items that included spiritual well-being and psychosocial items. This analysis shows that spirituality does not appear to be a moderator in the relationship between religiosity and health involvement on the dependent variables. Further, the correlation between the spirituality and dependent variables with the cross condition (religiosity) was low suggesting that the two variables could appear to be different concepts in terms of health involvement among African American women. Additionally, in subsequent analysis of spirituality as the between-subjects factor, an interaction with one dependent variable (brand attitude) approached significance which also may suggest that it is a separate concept.

Hypothesis 1

Memory of the brand.

Memory of the brand affiliated with ads without crosses was hypothesized to be greater among individuals who were highly involved with breast cancer screening. The analyses showed it was not (M=3.39, SD = 2.15) (t (-611), p=.54). In fact there was very low variance as low-involved individuals had similar means (M=3.07, SD = 1.85) (t (-611), p = .54).

Memory of the brand affiliated with ads with crosses was hypothesized to be greater among individuals lowly involved with breast cancer screening. Similar to the conditions without crosses, the crosses did not have a significant effect among low involved (M=3.07, SD=1.83) (t (-694), p=.49) or high involved (M=3.42, SD=2.06) (t (-694), p=.49). ANOVA revealed that there was no main

effect or interaction (Cross, M = 3.26, SD = 1.98, No Cross, M = 3.24, SD = 2.04).

Hypothesis 2

Memory for the ad.

Highly involved individuals with breast cancer screening had similar means (M=10.21, SD=2.08) (t (-604), p=.55) to lowly involved individuals (M=10.48, SD=1.43) (t (-604), p=.55). Highly involved individuals were hypothesized to remember the ads without the cross compared to the ads with the cross.

The means were similar in the cross conditions where high involved individuals had a slightly higher mean (M=9.84, SD=2.37) (t (-604), p=.55) compared to low involved individuals (M=9.56, SD=1.93) (t (-.604), p=.55). It was hypothesized that low-involved individuals would have a greater memory for the ad with the cross. ANOVA however showed that there was a main effect for the cross (M = 9.68, SD = 2.18) (F (1, 58) = 5.25, p<.05); (No Cross, M=10.43, SD = 1.72) however there was no interaction (F (1, 58) = .914, p = .343).

Hypothesis 3

Attitude toward the brand. Hypothesis 3 predicted that highly and lowly involved individuals with breast cancer screening would respond differently to the brand affiliated with breast cancer screening ads with and without crosses.

Specifically, high-involved individuals would have a greater response to the brand affiliated without the cross and lowly-involved individuals would have a

greater response to the brand affiliated with the peripheral cue (cross). To test for cross/no cross differences, a series of *t*-tests were run on the dependent variables in addition to a repeated measure ANOVA. No significant differences were found.

T-tests showed that individuals who were highly involved with breast cancer screening (M=11.12, SD = 2.19) t (165), p=.87) did not differ in regards to attitude toward the brand when there was no cross in the ad. Lowly involved individuals had similar responses (M = 11.22, SD = 2.35) (t (165), p=.87). The cross conditions as hypothesized would be greater among low involved, but it was not (M=11.50, SD=2.36) (t (133), p = .90); highly involved individuals scores showed little variance (M=11.42, SD=2.34) (t (133), p=.90). ANOVA revealed that there were no main effects or interaction between religiosity and health involvement (Cross, M = 11.46, SD = 2.28; No Cross, M =11.16, SD = 2.19) (F (1, 58) = 1.74, p=.525).

Hypothesis 4

Attitude toward the ad.

It was hypothesized that similar to attitude toward the brand that individuals highly involved with their health would have a more favorable attitude toward the ad without crosses than with crosses. The no cross conditions among high-involved (M=14.40, SD = 2.00) (t (224), p=.82) individuals compared to lowinvolved (M=14.53, SD=2.37) (t (224), p=.82) was not significant.

The cross condition however showed some variance where high (M=16.19, SD=2.26) (t (-1.078), p=.29) involved, not low-involved individuals as hypothesized, had a more positive attitude toward the ad (M=15.52, SD=2.51) (t (-1.08), p=.29) However, ANOVA showed there was a main effect of religiosity (Cross, M=11.46, SD=2.28; No Cross, M=14.37, SD=2.1) (F (1,58) = 35.35, p<.001); but no interaction effect between religiosity and health involvement (F (1,58) = 2.87, p = .096).

Hypothesis 5

Behavior intention.

Highly involved individuals were hypothesized to have a greater intention to get screened for breast cancer after being exposed to ads without the cross. There was very little variance between the two groups; highly involved was not significant (M=8.62, SD=3.28) (t (-103), p=.92). Lowly involved means nearly reflected the high-involved group (M=8.53, SD=3.37) (t (-103), p=.92).

The addition of the cross in the advertisement was hypothesized to be more appealing to those individuals who were lowly involved with breast cancer screening however, the means were identical indicating no differences between the two groups: high involved measured similarly (M=9.30, SD=2.93) and low involved measured (M=9.30, SD=3.44 (t (-008), p=.99). ANOVA revealed there was a main effect of the cross however (Cross, M = 9.23, SD = 3.14; No Cross, M = 8.49, SD = 3.26) (F (1, 58) = 9.00, p<.01). The mean for the behavior intention dependent variable with the cross was higher when compared to the mean without the cross.

Moderating Variable

Baron and Kenney (1986) state that a moderator can be either a qualitative or quantitative variable that affects the strength or the relationship between the independent and dependent variable. In addition, moderators are variables that specify when effects will hold in contrast to mediators that specify how and why effects occur (Baron & Kenney, 1996).

Spirituality was analyzed as a moderator but did not highly correlate with health involvement (see Appendices). ANCOVA showed that some of the relationships approached significance but there was not a significant interaction between health involvement and religiosity with spirituality as a covariate. The analysis is detailed below.

Hypothesis 6 and 7

Hypothesis 6 and 7 predicted spirituality to moderate the interaction between health and religiosity for the dependent variable of memory. The researcher predicted that individuals highly involved with breast cancer screening and who were high spiritually would have a greater memory of the brand and ads with the cross. Individuals who were lowly involved with breast cancer screening but high in spirituality would also have a greater memory of the brand and the ad with the cross. In contrast, highly involved individuals who were low spiritually would have less memory and lowly involved individuals who were low spiritually would have less memory of the brand and ad with the cross.

Univariate ANOVA for both memory of the brand affiliated with the cross (low group; M = 3.36, SD=2.13) (F (1, 58) = .15, p = .69) (high group; M = 3.16, SD=1.80) (F (1, 58) = .15, p = .69) and without the cross (low group; M=3.5, SD=1.97) (F (1, 58) = .93, p = .34) (high group; M = 3.00, SD=2.03) (F (1, 58) = .93, p = .34) did not reveal significant differences, nor did ANOVAs for memory for the ad. The ANOVA for memory of the ad without a cross (low group; M=10.79, SD=1.47) (F (1, 58) = 3.33, p = .07) (high group: M = 9.97, SD = 1.93) (F (1, 58) = 3.33, p = .07) and memory of the ad with a cross (low group; M=9.44, SD = 2.40) (F (1, 58) .79, p = .38) (high group: M=9.94, SD=1.91) (F (1, 58) = .79, p=.38) were not significant.

However when controlling for spirituality for the dependent variable memory of the brand, ANCOVA revealed significant main effects for religiosity (F (1, 57) = 8.34, p < .01) and the interaction between spirituality and religiosity (F (1, 57) = 8.34, p < .01). Spirituality was not a covariate in the interaction between religiosity and health involvement (F (1, 57) = .312, p = .58).

Hypothesis 8

Spirituality as a covariate. Spirituality was entered into the analysis as a covariate to determine if it was in fact a moderator in the relationship between religiosity and health involvement. This first hypothesis stated that spirituality would have an impact on this relationship for attitude toward the brand affiliated with and without crosses.

Similar to the preceding hypotheses, it was hypothesized that highly involved individuals would have a more favorable attitude toward the brand affiliated without the cross; lowly involved individuals who were high spiritually would have a more favorable attitude toward the brand affiliated with the cross. That individual would also be low spiritually. Univariate ANOVA (F (1, 58) = 3.62, p=.062) revealed that highly spiritual individuals had more favorable attitudes toward the ad (M=11.67, SD=2.31) compared to lowly spiritual (M=10.59, SD=2.06) when the cross was *not* affiliated with the brand. Means for attitude toward the brand with the cross was much closer between the low spiritual (M=11.05, SD=2.10, p=.19) and high spiritual (M=11.82, SD=2.50, p=.19) groups. ANCOVA revealed that the covariate of spirituality did not moderate the relationship between the independent variables and dependent variables.

Hypothesis 9

The second hypotheses that investigated spirituality's role as a moderator focused on highly and lowly spiritual individuals' attitudes toward the ads with and without crosses. Univariate ANOVA revealed no differences for means in the no cross condition among highly spiritual (M=14.75, SD=2.22) and low spiritual individuals (M=14.14, SD=2.10) (F (1,58) = 1.21, p = .28); there were also no differences in the cross condition between highly spiritual individuals (M=16.24, SD=2.31) and low spiritual individuals (M=15.44, SD = 2.45) (F (1,58) = 1.69, p=.20). Repeated measures analysis of ANCOVA revealed that the

interaction of religiosity and health involvement with spirituality as a covariate did approach significance (F (1, 57) = 4.41. p=.070).

Hypothesis 10

The fourth hypothesis that predicted spirituality as a moderator included behavior intention toward the sponsor. It was predicted that participants who were highly involved with breast cancer screening and who were low spiritually would have more favorable attitudes toward the advertisement without religious symbols (cross). It was also predicted that participants who were lowly involved with breast cancer screening and who were high spiritually would have more favorable attitudes toward the advertisements with religious symbols (cross). ANOVAs revealed that there were no significant differences. Means were similar for the no cross condition (low spirituality; M= 8.47; SD = 3.38) (F (1, 58) = .053, p = .82) (high spirituality; M=8.67, SD = 3.26) (F (1, 58) = .053, p = .82). The means were slightly different for the cross condition but was not significant (low spirituality; M = 9.10, SD = 3.17) (F (1, 58) = .207, p = .65) (high spirituality; M = 9.47, SD = 3.19) (F (1, 58) = .207, p = .65).

ANCOVA revealed that the interaction of religiosity and health involvement with spirituality as a moderator was not significant (F (1, 57) = .001, p = .98). Hypothesis 11 and 12

Hypothesis 11 and 12 predicted spirituality's interaction with religiosity on the dependent variable for memory of the brand and memory of the ad.

Hypothesis 11 predicted that the participants who were highly spiritual would have a greater memory of the brand affiliated with the cross; hypothesis 12

predicted that highly spiritual individuals would have a greater memory of the ad with a religious symbols (cross); participants who were low spiritually would have a greater the brand affiliated with ads without the cross and a greater memory of the ads without a cross.

T-tests revealed that there were no significant differences between the groups. Highly spiritual participants had lower memory of the brand affiliated with the ad with the cross than individuals who were low spiritually (high spiritual; M = 3.15, SD = 1.80) (t (.396), p = .69) (low spiritual; M = 3.35, SD = 2.13). However, low spiritual individuals remembered the brand affiliated with the ad without the cross (low spiritual; M = 3.5, SD = 1.98) (t (.96), p = .34) (high spiritual; M = 3.0, SD = 2.03).

In the initial analysis for hypothesis 11, ANVOA revealed no significant differences between religiosity and spirituality for memory of the brand affiliated with the ad without a cross (F (1, 58) = .929, p = .34) and also for memory of the brand affiliated with the ad with a cross (F (1, 58) = .157, p = .69). However a subsequent analysis showed that there was a significant difference between religiosity and spirituality for memory of the brand without the cross. The analysis also showed there was a significant difference for memory of the brand with the cross among highly spiritual individuals when compared to low spiritual individuals as predicted.

For hypothesis 12, the variance was greater for memory of the ad with the cross (low spiritual; M = 10.79, SD = 1.47) (t (1.82), p = .07) (high spiritual; M = 9.97, SD= 1.93) among low spiritual individuals. Highly spiritual individuals

remembered the ad with the cross higher than low spiritual individuals (low spiritual; M = 9.44, SD = 2.40) (t (-890), p = .38) (high spiritual; M = 9.93, SD = 1.91). However in a subsequent analysis for hypothesis 12, there were significant differences between religiosity and spirituality for memory of the ad without the cross (M =10.51, SD = 1.62) (F (1, 54) = 4.30, p<.05). There was not a significant difference for memory of the ad with a cross as predicted to be between both groups (M = 9.74, SD = 2.20) (F (1, 54) = .74, p=.393) *Hypothesis* 13

This hypothesis predicted spirituality's interaction with religiosity on the dependent variable for attitude toward the brand. It was predicted that the participants who were highly spiritual would have a more favorable attitude toward the brand affiliated with religious symbols (cross) in the ad; participants who were low spiritually would have a more favorable attitude toward the brand affiliated with the ad without the cross.

T-tests revealed that there were no significant differences between the groups. Highly spiritual participants responded favorably toward the brand affiliated with the cross than individuals who were low spiritually (high spiritual; M = 11.82, SD = 2.50) (t (-1.29), p = .20) (low spiritual; M = 11.05, SD = 2.09) (t (-1.29), p = 20). Highly spiritual participants also favored the brand without the cross (low spiritual; M = 10.59, SD = 2.06) (t (-1.90), p = .06) (high spiritual; M = 11.68, SD = 2.31) (t (-1.90), p = .06).

In an initial analysis, ANVOA revealed a slight difference between religiosity and spirituality. Highly spiritual individuals responded more favorably

to the brands affiliated without the cross (M=11.68, SD =2.31) (F (1, 58) = 3.61, p = .06) compared to low spiritual individuals (M = 10.59, SD = 2.06). There were no differences when the cross was affiliated with the ad (high spiritual; M = 11.81, SD = 2.50) (F (1, 58) = 1.65, p = .20) (low spiritual; M = 11.05, SD = 2.09). A subsequent analysis of the spirituality level resulted in a significant difference between groups (M = 11.14, SD = 2.22) (F (1, 54) = 11.04, p <.01), highly spiritual individuals responded more favorably to the brand affiliated without the cross (M = 12.06, SD = 2.28) than low spiritual individuals (M = 10.22, SD = 1.76). The hypothesis was partially supported because high spiritual individuals did respond more favorably to the brand affiliated with the ad with a cross (M = 12.31, SD = 2.33) compared to low spiritual individuals (M = 10.68, SD = 1.83) (F (1, 54) = 8.18, p<.01).

Hypothesis 14

Hypothesis 12 predicted spirituality's interaction with religiosity on the dependent variable for attitude toward the ad. It was predicted that the participants who were highly spiritual would have a more favorable attitude toward the ad with religious symbols in the ad; participants who were low spiritually would have a more favorable attitude toward the ad without the cross.

T-tests revealed that there were no significant differences between the groups. Highly spiritual participants responded favorably toward the ad with the cross than individuals who were low spiritually (high spiritual; M = 16.24, SD = 2.30) (t(-1.30), p = .20) (low spiritual; M = 15.44, SD = 2.45) (t(-1.30), p = .20).

Highly spiritual participants were also slightly more favorable toward the ad without the cross (low spiritual; M = 14.14, SD = 2.10) (t(-1.09), p = .28) (high spiritual; M = 14.75, SD = 2.22).

ANVOA revealed no significant differences between religiosity and spirituality. Highly spiritual individuals responded more favorably to the ads without the cross (M=14.75, SD =2.22) (F (1, 58) = 1.21, p = .27) compared to low spiritual individuals (M = 14.12, SD = 2.10). There were no differences when the cross was in the ad, however highly spiritual individuals favored these ads more (high spiritual; M = 16.24, SD = 2.31) (F (1, 58) = 1.70, ρ = .20) (low spiritual; M = 15.44, SD = 2.45). A subsequent analysis of the spirituality level resulted in a significant difference between groups (cross, M = 15.84, SD = 2.28) (F(1, 54) = 9.10, p < .01) (no cross, M = 14.40, SD = 2.13) (F(1, 54) = 10.75, p < .01)p<.01). Highly spiritual individuals responded more favorably to the ad with the cross (M = 16.71, SD = 1.99) than low spiritual individuals (M = 14.96, SD = 2.24) however the highly spiritual individuals responded more favorably to the ad without the cross as well (M = 15.25, SD = 1.80) compared to the low spiritual individuals (M = 13.55, SD = 2.12), thus the hypothesis was only partially supported.

Hypothesis 15

Hypothesis 15 predicted spirituality's interaction with religiosity for the dependent variable, behavior intention toward the sponsor. It was predicted that

the participants who were highly spiritual would have a greater intention toward the sponsor affiliated with ads with the cross; participants who were low spiritually would have a greater intention toward the sponsor affiliated with ads without the cross.

T-tests revealed that there were no significant differences between the groups. Highly spiritual participants had a higher intention toward the sponsor affiliated with the ad without the cross than individuals who were low spiritually (low spiritual; M = 8.47, SD = 3.38) (t (-.230), p = .82) (high spiritual; M = 8.67, SD = 3.26). However, highly spiritual participants had a slightly greater intention toward the sponsor with the cross but the differences were not significant (low spiritual; M = 9.10, SD = 3.17) (t (-455), p = .65) (high spiritual; M = 9.47, SD = 3.19).

An initial analysis of ANVOA revealed no significant differences between religiosity and spirituality for behavior intention toward the sponsor affiliated with the ad without a cross (F (1, 58) = .053, p = .82) and also for behavior intention toward the sponsor with the ad with a cross (F (1, 58) = .207, p = .65). The subsequent analysis however shows that there were significant differences between religiosity and spirituality for behavior intention toward the sponsor. The highly spiritual individuals had a greater intention (M = 9.89, SD = 2.67) compared to low spiritual individuals (M = 8.10, SD = 3.14) (F (1, 54) = 5.09, p <05). The no cross condition however was not significant but the mean for the highly spiritual group was greater (M = 8.88, SD = 2.9) than the low spiritual group (M = 7.48, SD = 3.10), thus the hypothesis was only partially supported.

Hypothesis 16

Hypothesis 16 predicted that there would be an interaction between religiosity, health involvement with breast cancer screening, spirituality and the dependent variables. The previous analyses of ANOVA, ANCOVA and *t*-tests showed that there were no significant interactions and therefore the hypothesis was not supported.

Summary of Results

None of the hypotheses presented were fully supported however, hypothesis 11, 13, 14, 15, those detailing the interaction of spiritual level with religiosity were partially supported; there were also several main effects.

Many of the hypotheses were not fully met because the analysis showed in several cases to be opposite of the predicted direction among highly and lowly-involved individuals. For instance, individuals who were highly involved with breast cancer screening responded more favorably to ads with *and* without crosses.

Hypotheses 1 and 2 which predicted highly involved individuals would remember the brand and ad without the cross was not significant. Hypotheses 3 and 4 that predicted that highly involved individuals would have favorable attitudes toward the brand (H: 3) and the ad (H: 4) were not met however there was a main effect for attitude toward the ad where the cross condition was significant compared to the condition where individuals were exposed to ads with no crosses.

Hypothesis 5 that predicted highly involved individuals would have a greater intention toward the sponsor was not supported however there was a main effect for the cross.

Hypothesis 6 and 7 predicted spirituality would moderate the interaction between health involvement and religiosity but these were not supported; however there were main effects when the cross was present in the ads for memory of the brand (H:6) and memory of the ad (H:7)

Hypotheses 8, 9 and 10 where spirituality was controlled for in the interaction between health involvement and religiosity, it did not appear to moderate the interaction. Spirituality was lowly correlated with religiosity and in some instances it was negatively correlated with religiosity. However, when the interaction of religiosity and health involvement with spirituality as a covariate (dependent variable of behavior intention) was analyzed, there was a significant main effect. In addition, when the interaction of the individual's spirituality level and religiosity were examined, highly spiritual individuals favored and remembered ads with and without crosses more than individuals who were low spiritually; they also had a greater intention to get additional information from the sponsor.

Hypotheses 11, 13, 14 and 15 predicted that highly spiritual individuals would remember the brand (H: 11); favor the brand (H: 13); favor the ads (H: 14) and have a greater intention (H: 15) *with* crosses more than ads *without* crosses compared to individuals who were low spiritually. They (the highly spiritual individuals) remembered, favored the brand and the ads and also had a greater

intention toward the sponsor *with* and *without* the crosses and thus the hypotheses were partially met. However, this is inconclusive as the group means were marginal. A detail of the statistical analyses can be found in the tables in the appendices.

Qualitative Results

The interviews lasted approximately 5 to 10 minutes. Several participants stated that they enjoyed the ads and believed they were informative.

Participant No. 52 - "It (the study) was interesting; I really enjoyed it."

Participant No. 41 - "It (the study) was knowledgeable and I liked looking at the pictures and the information on there. I read a lot about cancer because it runs in our family. My grandmother, aunts and cousins have had cancer. They (the ads) had information on them and it was informational."

Other participants commented that the study was not inclusive and did not seem to target older women or women who were single.

Participant No. 5 - "I think the most successful one (ad) is the one with the two females. I'm not religious and I am not married so the other ads are out of my regular emotional reality. They have less resonance for me."

Participant No. 45 - "I think it was an ok experience. If the younger adults would have looked at it (ads), it may have been more appealing. There was nothing appealing for the older woman - that it was important for people to get screened. I have had tumors in my breast several times and you want to be sure so there is nothing to be afraid of."

However, several commented on the inclusiveness of the study and also the significance of the cross.

Participant No. 20 - "I got a lot out of it. The ads and the wording and what it meant to me to go get a check up and every one of the ads were very good and reached out and grabbed me. It was so real, and the wording; it is what's happening. We're not faced with this (breast cancer) and every day we go through this and these are not mentioned to us. Unless we talk to a doctor, well, it's just not ever mentioned and the stores like this and the churches don't have this (information). They're just like they should – They grabbed me."

Participant No. 34 - "I got it. The ads were good and it made you think. The cross made a difference."

Participant No. 61 – "It (the ad) would have a positive impact on people. I also think that it would have had an impact on someone that wasn't highly spiritual. The ads with the crosses – there is something spiritual in the article (ad). There is an effect outside of the church especially the lady and her son article (ad); the cross really stuck out to me but the text didn't. It could also help more for someone that is already in the church. It (cross) says that God is with you – the cross in the ad says that you are ready to face your fear – when we are scared to go to the doctor."

There were two individuals however that stated in the interviews that they were not Christian but practiced other religions. They suggested there should be other measures included that encompass additional religions and realms of spirituality.

Participant No. 21 - "I am a practicing Buddhist and have been for 38 years. I would have used higher power in this study as everyone is not a practicing Christian."

Participant No. 27 – "I am a Muslim and the ads don't bother me but I look at the cross as bearing some things. It reminds me of the stress of life but also about Christ who was an ordained prophet but who I feel died in vain. I study all religions and we put God in a box. He came to many people to bring about peace so that we would be successful in life; so all religions have something to offer you if you just allow that. It (the study) can be encouraging without using God or Jesus Christ."

In conjunction with statistical analysis, several individuals specifically stated in the interviews that the ads did not change their opinions about breast cancer screening and the cross would not compel them to get a mammogram or do BSE.

Participant No. 18- "It was good (the study) but I really didn't pay attention to the symbols. The church really didn't influence me. The ads that influenced me were with the people - the women."

Participant No. 19 – "Spirituality has nothing to do with these ads."

In other interviews a few individuals stated they were inspired to get a mammogram and that they were appealing. Two individuals stated following the interview they had been afraid to get mammograms and had intentions of now getting screened.

Finally, in every session several individuals interviewed commented on the name of the church missing from the advertisement and that this had some impact on their opinions about the church as a sponsor. Many of the individuals expressed hesitancy because they felt the church was not credible because the name was mentioned only once in the directions before exposure to the ads.

Participant No. 30 - "I couldn't really comment on the credibility of the church because it was not in the ad. I couldn't say whether the church was good or bad based on the information that I've never attended the church. I would not feel comfortable with the ads even if it was a church that was recognizable, like Eddie Long's church, if the name was not on the ad."

Participant No. 2 – "I enjoyed the study but could not tell if the church was supposed to be on all of the ads? It was somewhat confusing."

Participant No. 67 - "My problem was that it (survey) would ask you would you be willing to donate to the church when the church was not a part of it."

In summary, the majority of women sampled thought the ads were good; however, the interviews showed that religion in ads among some were not necessarily something that would compel them to get screened for breast cancer. In addition, there were two individuals who told the researcher that they were not practicing Christians and that the study was limited. While the cross/no cross ads were appealing, many felt that additional information was needed in the advertisements such as the name of the church and that the symbol of the cross alone may not necessarily affect intention to get screened for breast cancer.

Chapter 8

General Discussion

Summary and Implications

Theoretical Implications

The effect of religiosity (the symbol of the cross) in breast cancer advertisements targeted to African American women shows quantitatively and qualitatively to have a significant impact on memory, attitudes and intention. However, there is little evidence to suggest that there is a difference among individuals who are highly and lowly-involved with breast cancer screening. In fact, in many instances, the lines are blurred where women who are highly involved with breast cancer screening are responding favorably to both ads with and without crosses compared to low involved women.

The findings however suggest that religion is important to African American women as literature has extensively reported (Mattis, 2000; Holt et al., 2003; Kreuter et al., 2003; Ashwig-Giwa, 1999). Even greater, spirituality appears to be a separate concept than religiosity in relation to breast cancer screening advertising messages targeting African American women. Spirituality was not a moderating variable in the interaction between health involvement and religiosity. As researchers have suggested spirituality and religiosity often overlap (Koenig, 2001, Ellison & Smith, 1991), here it appears that they are distinct.

The ELM was not fully supported in this study as the model predicts that processing of information and attitude change for highly involved individuals will occur in a central route of processing information (Petty & Cacioppo, 1986). Highly involved individuals in this study were affected by the peripheral cues as much as or more so than the lowly involved individuals. This may be in part that the brand and sponsor were synonymous and "religious" in nature and could explain why both high and low involved individuals were affected by these ads. Lowly involved individuals were affected by the peripheral cue (the cross) however; results were not conclusive that this was in fact affective processing. There appeared to be a favorable "liking" for the ads with the cross and indication that both high and low individuals would have intention to obtain information about breast cancer screening from the sponsor or church. The peripheral cue of the cross also may have not been effective for low involved individuals because it could have been a distraction for the breast cancer screening message while helping the church as a brand.

Researchers addressed the issue of highly involved individuals who actively process the peripheral cue and state this may be due to a dual mediation of a stimulus during exposure to the advertisement (MacKenzie, Lutz & Belch, 1986). MacKenzie et al. state that there could be several explanations as to how individuals process executional portions of the ad and theorized that there could be a dual processing of both the central and peripheral routes (DMH or Dual Mediation Hypothesis). In addition, there could be a difference in experimentally

manipulating involvement and measuring involvement (Brown & Stayman, 1992) as it was done in this study.

The involvement in not only breast cancer screening but the act of going to church or religion could have increased the visibility of the peripheral cue among this group thus increasing the effect and emotional affect (transferral) of the cross which is closely related to the church.

Descriptive statistical analysis showed that a large percentage of the sample had positive attitudes, perceptions toward breast cancer consequences and perceived few negative benefits to getting screened. The majority of participants indicated that they *do* pay attention to information about breast cancer in the media and have either done BSE or gotten a mammogram. This could be considered an indication that they are positive about seeking breast cancer screening information. Health beliefs and attitudes however did not highly correlate with spirituality suggesting that either the sample is already highly involved with their health or are neither highly or lowly spiritual. Additionally, the results of the study show that this sample's beliefs associated with beliefs and attitudes about breast cancer screening behavior were not *negative* as other studies have suggested (Holt, et al., 2003) when the spiritual locus of health control was utilized to explain and predict mammography utilization among African American women.

Although it appears that the women in this study are not fatalistic and are optimistic about their health, this study is an important part of research that addresses barriers to breast cancer screening among African American women.

The women in this study also appeared to be confident and optimistic not only about their health but open to seeing religion in health advertisements, specifically if the brand name or church name is included.

The cross not only has an impact on information processing but could impact health beliefs. Spirituality must be further examined where it can be conclusively determined how it impacts both individuals who are not as involved with their health but who are highly spiritual.

The HBM was also tested in the study but not fully supported as the dimensions did not conclusively predict behavior change among African American women. The health involvement index included items that were pulled from various breast cancer involvement scales in addition to a scale that measures attitudes and norms related to mammography screening (Tiro, Diamond, Fernandez, DiClemete, Perz, Rakowski, et al. 2005) rather than the complete scale measuring health beliefs concerning breast cancer screening among women as tested by Champion and Scott (1997). This may have prevented the researcher from accurately testing the health belief model as the Tiro et al. scale would most likely accurately test the theory of reasoned action or theory of planned behavior. However, the SWBS scale that includes two dimensions (horizontal or existential well-being and vertical or religious wellbeing) appeared to be a strong measurement of the spirituality level among African American women in this sample after a subsequent analysis was conducted. Future analysis should include an analysis of the interaction

between religiosity and spirituality as a total score rather than spiritual level where subjects were statistically divided into a high and low group.

The fact that hypothesis 15 was partially supported could suggest that spirituality is not a moderator in the terms of perceptions about breast cancer screening but rather a modifier as the HBM suggests. Women in this study who were highly spiritual and exposed to ads with crosses were more likely to state that they would seek additional information about the sponsor compared to when exposed to ads without crosses; this is similar to what the HBM suggests would lead to cues to action for seeking health information.

Practical Implications

The study's practical implications are important as results suggest religion is an important part of life and can be utilized to target health information to African American women. Here, both quantitative and qualitative methodology shows that African American women think religion is appealing in advertisements. Although many indicated in the interviews that the cross would not compel them to get screened for breast cancer, there was some statistical and contextual indication that the brand or the church would compel them to do so. Many indicated that if the "name" of the church was added, this would have increased the credibility of the church and the likelihood of getting information would have been much greater.

The fact that the church is an integral part of African American life, it is plausible to conclude that the church is one of the keys to addressing health

disparities in not only the Midwest but throughout the country. The church can play a partner in gaining trust among this group and therefore a strategic communicator role in disseminating information via sponsored advertising materials concerning breast cancer screening.

The church as a brand not only heightens awareness about the church's involvement with a socially desirable good but it positions the church as a health brand. Comparable to brands affiliated with health products such as Susan G. Komen or the American Cancer Society, the Black church as a brand is in a position to potentially reach the target audience of African American women concerning the importance of breast cancer screening. The linkage between the brand of the church and its mission to fight breast cancer are only a starting point. Future research could involve specific brand names that would include individual names of churches as compared to a fictional name that was used in this study. In addition, the names of other service organizations with similar roles as the church could be compared and contrasted among African American women in future studies.

Limitations

The convenience sample was limited as it may have included individuals who were already highly involved with health creating a "high" low group or rather not creating a "true" high and "true" low group. This could have been the reason for similar group means; a random sampling of the population may have eliminated this issue and been representative or of more defined high and low

groups. The sample also comprised of women who were sociable and willing to participate in a research study.

Although the study did include women who were 45 and older, there should have been additional questions incorporating BSE and also self-efficacy questions that may have been more in line with testing the strength of the HBM where this dimension (self-efficacy) accounts for the ability to successfully perform an action (Rosenstock, 1988, 1974).

Some respondents also indicated that they were primed to see the cross in the ad after they had seen one or two. Others stated that their memory increased after viewing each advertisement. This may have increased memory however results showed that there were no order effects. In conclusion, there is much scholars know about health belief and attitudes concerning breast cancer screening among African American women however, this study is a beginning to understanding how information can be strategically communicated and targeted to this group through the church. The church as a brand could not only create a synergism between religious practice and buying into the idea of a healthy lifestyle (i.e. breast cancer screening) but could become an active partner in creation and dissemination of health information. The church is a largely untapped resource for this type of mass mediated communication and could be an important resource for helping create better attitudes and positively affect beliefs concerning breast cancer screening.

Future Research

Future research should be directed to include the brand in the advertisement to see how individuals respond to not only the symbol of the cross but to the name of the specific brand or church name and other similar service organizations. In addition, other religions should be studied as other ethnicities and races are highly spiritual and religious. This could help health communicators and practitioners have far reaching impact for several cultures.

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Table Appendix

Table 3. Breast Cancer Rates Among African American Women in the Midwest

Midwest States	State Statistics	National Statistics
Missouri	Overall – 26.9	27.0
	Caucasians – 26.2	26.4
	Blacks - 35.7	35.4
	Hispanics – 25.9	17.2
	Asian/Pacific Islander	
	Less than 75,000	12.6
	American Indian/Alaska Native	13.6
	Less than 75,000	
Kansas	Overall – 25.3	27.0
	Caucasians – 24.7	26.4
	Blacks - 38.0	35.4
	Hispanics – 13.0	17.2
	Asian/Pacific Islander	
	Less than 75,000	12.6

^{*}Average annual age adjusted rates for breast cancer per 100,000 persons by race 1997-2001 (CDC National Center for Health Statistics)

	American Indian/Alaska	12.6
	Native	13.6
Illinois	Overall – 26.9	27.0
	Caucasians – 28.0	26.4
	Blacks - 39.6	35.4
	Hispanics – 13.0	17.2
	Asian/Pacific Islander	
	11.2	12.6
	American Indian/Alaska Native Less than 75,000	13.6
Oklahoma	Overall – 26.4	27.0
	Caucasians – 26.4	26.4
	Blacks - 38.7	35.4
	Hispanics – 15.6	17.2
	Asian/Pacific Islander	
	Less than 75,000	12.6
	American Indian/Alaska Native 15.9	13.6

Nebraska	Overall – 24.4	27.0
		26.4
	Caucasians – 24.0	
	Blacks – 42.9	35.4
	DIACKS — 42.5	17.2
	Hispanics Less than 75,000	
	Asian/Pacific Islander Less than 75,000	12.6
	American Indian/Alaska Native Less than 75,000	13.6

Table 4. Hypothesis Table

2 X 2 Mixed Design

Independent Variables – Factor A= Health Involvement; Factor B = Religiosity

REL (repeated measure) = Religion, HI (between measure) = Health Involvement, SL

(between measure) = Spiritual Level

(5) Dependent Variables

Ab= Attitude toward the Brand **Aad =** Attitude toward the Advertisement, **MEM=** Memory (Brand and Ad), **INT =** Behavior Intention

Purpose	Hypotheses/ RQ	Theories/ Literature	Measures	Analysis
Testing (mass mediated) effects of information processing of breast cancer	H1: Subjects' health involvement with breast cancer screening practices will interact with religiosity in health ads to increase memory of the brand.	Religious symbols as Peripheral Cues in Advertising (Dotson & Hyatt, 2000)	IVs: With or without religious symbols; High and Low Health Involvement *REL (2) X HI (2) for MEM	ANOVA
advertisements with religious symbols vs. without religious symbols among African American women.	H1a: Subjects who are highly involved with breast cancer screening practices will have an equal or greater memory of the brand affiliated with breast cancer screening advertisements without religious symbols than with religious symbols. H1b: Subjects who are lowly	Revisited Affect-Symbolic Imagery (Moore, 1996) The use of physical symbols to transmit culture in religious schools: A comparison of	DV: Memory	t test two-tail
	involved with breast cancer screening practices will have a greater memory of the brand affiliated with the breast cancer screening advertisements with religious symbols than without religious symbols.	Adventist and Catholic Schools in American (Furst & Denig, 2005)		t test two-tail

Purpose	Hypotheses/ RQ	Theories/ Literature	Measures	Analysis
Testing (mass mediated) effects of information processing of breast cancer advertisements	H2: Subjects' health involvement with breast cancer screening practices will interact with religiosity in health ads to increase memory of the ad. H2a: Subjects who are highly	Religious symbols as Peripheral Cues in Advertising (Dotson & Hyatt, 2000) Revisited Affect-	IVs: With or without religious symbols; High and Low Health Involvement *REL (2) X HI (2) for MEM	ANOVA
with religious symbols vs. without religious symbols among African American	involved with breast cancer screening practices will have an equal or greater memory of breast cancer screening advertisements without religious symbols than with religious symbols.	Symbolic Imagery (Moore, 1996) The use of physical symbols to transmit culture in	DV: Memory	t test two- tail
women.	H2b: Subjects who are lowly involved with breast cancer screening practices will have a greater memory of breast cancer screening advertisements with religious symbols than without religious symbols.	religious schools: A comparison of Adventist and Catholic Schools in America (Furst & Denig, 2005)		t test two- tail

H3: Subjects' health involvement with breast cancer screening practices will interact with religiosity in health ads to increase attitude toward the brand. H3a: Subjects who are highly involved with breast cancer screening practices will have a more favorable attitude toward the breast cancer screening ad brand without religious symbols than with religious symbols. H3b: Subjects who are lowly involved with their health will have a more favorable attitude toward the breast cancer screening ad brand with religious symbols than without religious symbols than without religious symbols.	Mass Media effects on Attitude Change and persuasion Elaboration Likelihood Model (Petty, Priester & Briñol, 2002; Petty & Cacioppo, 1979; 1981; 1983, 1986) Religiosity (Lukwago et. al, Levin, J., Taylor, J. & Chatters, L. 1995; Mattis, J. 2000, Ellison, 1994, 1998; Kreuter and McClure, 2004)	IVs: With or without religious symbols; High and Low Health Involvement *REL (2) X HI (2) for Ab DV: Attitude toward the brand Attitude toward brand (Mitchell & Olson 1981;Biehel, Stephens & Curlo, 1992).	t test, two-tail
H4: Subjects' health involvement with breast cancer screening practices will interact with religiosity in health ads to increase attitude toward the ad. H4a: Subjects who are highly involved with breast cancer screening practices will have a more favorable attitude toward the breast cancer screening ad without religious symbols than with religious symbols. H4b: Subjects who are lowly involved with their health will have a more favorable attitude toward breast cancer screening ads with religious symbols than without religious symbols.	Mass Media effects on Attitude Change and persuasion Elaboration Likelihood Model (Petty, Priester & Briñol, 2002;Petty & Cacioppo, 1979; 1981;1983, 1986) Religiosity (Lukwago et. al, Levin, J., Taylor, J. & Chatters, L. 1995; Mattis, J. 2000, Ellison, 1994, 1998; Kreuter and McClure, 2004)	IVs: With or without religious symbols; High and Low Health Involvement *REL (2) X HI (2) for AA DV: Attitude toward the Ad Attitude toward advertisement (Shimp, 1981; Burton and Lichtenstein, 1989); Attitude strength and advertising repetition, Hsugtvedt et al., 1994)	t test, two-tail

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	H5: Subjects' health involvement	Breast Cancer	IVs: With or without	
	with breast cancer screening	Issue	religious symbol, Health	
	practices will interact with	Involvement and	Involvement,	
r	religiosity in health ads to increase	Personal		ANOVA
i	ntention to get screened for breast	Involvement with	*REL (2) X HI (2) for	
c	cancer.	Product	INT	t test two
				tail
I	H5a: Subjects who are highly	(Zaichowsky,	DV: Behavior Intention	
	nvolved with breast cancer	1985; 1994 Kirby		
S	screening practices will be equally	et al., 1998,		
	or more likely to get screened for	Rimal & Flora,		
	preast cancer after being exposed	1998;		
	o breast cancer screening ads	Flora, J. &		t test two
	without religious symbols than	Maibach, E.		tail
	with religious symbols.	1990.)		tan
ľ	with religious symbols.	1990.)		
, T	I.Sh. Subjects who are levely			
	H5b: Subjects who are lowly nvolved with breast cancer			
	screening practices will have a			
	greater chance to get screened for			
	preast cancer after being exposed			
	o breast cancer screening ads with			
	religious symbols than without			
r	eligious symbols.			

	H6: Subjects' health involvement with breast cancer screening practices and religiosity in health ads will interact with spirituality level to increase memory of the brand. H6a: Subjects highly involved	Issue and Personal Involvement with Product (central to the argument— issue relevance) (Zaichowsky,	IVs: With or without religious symbols, Health Involvement, Spiritual Level *REL (2) X HI (2) X SL (2) for MEM DV: Memory	ANCOVA	
	with breast cancer screening practices and who are high spiritually will have a greater memory of the brand affiliated with breast cancer screening advertisements with religious symbols than without religious symbols.	1985; 1994 Kirby et al., 1998; Rimal & Flora, 1998; Flora, J. & Maibach, E. 1990.)	DV. Memory	ANOVA	
	H6b: Subjects lowly involved with breast cancer screening practices and who are high spiritually will have a greater memory of the brand affiliated with breast cancer screening advertisement with religious symbols.			ANOVA	
	H6c: Subjects highly involved with breast cancer screening practices and who are low spiritually will have less memory of the brand affiliated with breast cancer screening advertisements with religious symbols than without religious symbols.			ANOVA	
	H6d: Subjects lowly involved with breast cancer screening practices and who are low spiritually will have a less memory of the brand affiliated with breast cancer screening advertisements after being exposed to ads with religious symbols than without religious symbols.			ANOVA	

H7: Subjects' health involvement with breast cancer screening practices and religiosity in health ads will interact with spirituality level to increase memory of the ad. H7a: Subjects highly involved	Issue and Personal Involvement with Product (central to the argument— issue relevance) (Zaichowsky,	IVs: With or without religious symbols, Health Involvement, Spiritual Level *REL (2) X HI (2) X SL (2) for MEM	ANCOVA
with breast cancer screening practices and who are high spiritually will have a greater memory of breast cancer screening advertisements with religious symbols than without religious symbols.	1985; 1994 Kirby et al., 1998; Rimal & Flora, 1998; Flora, J. & Maibach, E. 1990.)	DV: Memory	ANOVA
H7b: Subjects lowly involved with breast cancer screening practices and who are high spiritually will have a greater memory of breast cancer screening advertisement with religious symbols.			ANOVA
H7c: Subjects highly involved with breast cancer screening practices and who are low spiritually will have less memory of breast cancer screening advertisements with religious symbols than without religious symbols.			ANOVA
H7d: Subjects lowly involved with breast cancer screening practices and who are low spiritually will have a less memory of breast cancer screening advertisements after being exposed to ads with religious symbols than without religious symbols.			ANOVA

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To test the	H8: Subjects' health involvement	IVs: With or without	ANGONA
interaction	with breast cancer screening	religious cues, Health	ANCOVA
effects of	practices and religiosity in health	Involvement, Spirituality	
health	ads will interact with spirituality	Level	
involvement	level to increase attitude toward		
and spirituality	the brand.	*REL (2) X HI (2) X SL	
health		(2) for Ab	
advertisements	H8a: Subjects who are highly		
with religious	involved with breast cancer	DV: Attitude toward the	
symbols	screening practices and who are	brand	ANOVA
among African	low spiritually will have a more		
American	favorable attitude toward the brand		
women.	without religious symbols than		
	with religious symbols.		
	H8b: Subjects who are lowly		ANOVA
	involved with breast cancer		
	screening practices and who are		
	high spiritually will have a more		
	favorable attitude toward the brand		
	with religious symbols than		
	without religious symbols.		
	with a religious syllicols.		

	H9: Subjects' health involvement	IVs: With or without	ANCOVA
	with breast cancer screening	religious symbols, Health	
	practices and religiosity in health	Involvement, Spiritual	
	ads will interact with spirituality	Level	
	level to increase attitude toward		
	the advertisement	*REL (2) X HI (2) X SL	
		(2) for Aad	
	H9a: Subjects who are highly		
	involved with breast cancer	DV: Attitude toward the	
	screening practices and who are	ad	ANOVA
	low spiritually will have a more		
	favorable attitude toward the		
	advertisement without religious		
	symbols than with religious		
	symbols.		
	H9b: Subjects who are lowly		ANOVA
	involved with breast cancer		
	screening practices and who are		
	high spiritually will have a more		
	favorable attitude toward the		
	advertisement with religious		
	symbols than without religious		
ĺ	symbols.		
1			
ĺ			

H10: Subjects' health involvement with breast cancer screening practices and religiosity in health ads will interact with spirituality level to increase intention to get screened for breast cancer. H10a: Subjects highly involved with breast cancer screening practices and who are high spiritually will have a greater intention to get screened for breast cancer after being exposed to breast cancer screening ads with religious symbols than without	Issue and Personal Involvement with Product (central to the argument– issue relevance) (Zaichowsky, 1985; 1994 Kirby et al., 1998; Rimal & Flora, 1998; Flora, J. & Maibach, E. 1990.)	IVs: With or without religious symbols, Health Involvement, Spiritual Level *REL (2) X HI (2) X SL (2) for INT DV: Behavior Intention	ANOVA
religious symbols. H10b: Subjects lowly involved with breast cancer screening practices and who are high spiritually will have a greater intention to get screened for breast cancer after being exposed to breast cancer screening ads with religious symbols than without religious symbols.			ANOVA
H10c: Subjects highly involved with breast cancer screening practices and who are low spiritually will have a lesser intention to get screened for breast cancer after being exposed to breast screening ads with religious symbols than without religious symbols.			ANOVA
H10d: Subjects lowly involved with breast cancer screening practices and who are low spiritually will have a lesser intention to get screened for breast cancer after being exposed to breast cancer screening ads with religious symbols than without religious symbols.			ANOVA

H11: Subjects' spirituality level and religiosity in health ads will interact to increase memory of the brand. H11a: Subjects who are high spiritually will have a greater memory of the brand affiliated with breast cancer screening advertisement with religious symbols than without religious symbols. H11b: Subjects who are low spiritually will have less memory of the brand affiliated with breast cancer screening advertisements with religious symbols than without religious symbols than without religious symbols.	IVs: With or without religious symbols, Spiritual Level *REL (2) X SL (2) for MEM DV: Memory	ANOVA t test, two tail t test two tail
H12: Subjects' spirituality level and religiosity in health ads will interact to increase memory of the ad. H12a: Subjects who are high spiritually will have a greater memory of breast cancer screening advertisement with religious symbols than without religious symbols. H12b: Subjects who are low spiritually will have less memory of breast cancer screening advertisements with religious symbols than without religious symbols than without religious symbols.	IVs: With or without religious symbols, Spiritual Level *REL (2) X SL (2) for MEM DV: Memory	ANOVA t test, two tail t test two tail

H13: Subjects' spirituality level and religiosity in health ads will interact to increase attitude toward the brand H13a: Subjects who are high spiritually will have a more favorable attitude toward brand with religious symbols than without religious symbols. H13b: Subjects who are low spiritually will have a less favorable attitude toward the brand with religious symbols than without religious symbols than without religious symbols.	IVs: With or without religious cues, Spiritualit Level *REL (2) X SL (2) for A DV: Attitude toward the brand	ANOVA
H14: Subjects' spirituality level and religiosity in health ads will interact to increase attitude toward the advertisement. H14a: Subjects who are high spiritually will have a more favorable attitude toward breast screening advertisements with religious symbols than without religious symbols. H14b: Subjects who are low spiritually will have a less favorable attitude toward breast screening advertisements with religious symbols than without religious symbols than without religious symbols.	IVs: With or without religious cues, Spiritualit Level *REL (2) X SL (2) for A DV: Attitude toward the advertisement	

	H15: Subjects' exposure to religiosity in health ads will interact with spirituality level to increase intention to get screened for breast cancer. H15a: Subjects who are high spiritually will have a greater intention to get screened for breast cancer after being exposed to breast screening ads with religious symbols than without religious symbols. H15b: Subjects who are low spiritually will have a lesser intention to get screened for breast cancer after being exposed to breast screening ads with religious symbols than without religious symbols than without religious symbols.	IVs: With or without religious symbols, Spirituality level *REL (2) X SL (2) for INT DV: Behavior Intention	ANOVA t test t test
	H16: Subjects exposure to religiosity in health ads will interact with health involvement and spirituality level to increase attitude toward the brand, attitude toward the ad, memory and behavior intention.	IVs: With or without religious symbols, Health Involvement, Spirituality level *REL (2) X SL (2) for AA, MEM, INT DVs: Attitude toward Ad, Memory, Behavior Intention	MANOVA
In-depth interviewing in pilot test to inquire about the merit of the advertising stimuli Brief interviews in debriefing	Qualitative methodology to inform the strength of the stimulus among African American women. Qualitative methodology to inform the statistical findings of both the pilot and formal study	Pre-test of stimulus	

Table 5.
Initial analysis of Exploratory Principal Component Analysis of Perceived Benefits, Barriers, Severity to Mammography Screening for Sample of African American women (N=360).

Mammography Screening Factor	Factor Loadings	Proportion of variance
		explained (eigenvalue)
1:Benefit Screening		
Breast cancer is personally blank to me	0.780	
Mammograms are necessary even when there is no history of breast cancer problems in a family	0.727	
Mammograms are helpful when you have one every year	0.711	
People close to me will benefit if I have a mammogram	0.588	
Having a mammogram will decrease my chances of dying from breast cancer	0.402	
2. Barrier Screening	0.777	
Once you have a couple of mammograms that are normal, you don't need to have any more for a few years	0.763	
If I have a breast exam from a doctor or nurse, I don't need to have a mammogram		
If a mammogram finds something, then what is there will be too far along to do anything about it anyway	0.730	
I would probably not have a mammogram if my doctor expressed even a little doubt about whether I really needed one.		

Initial analysis of Exploratory Principal Component Analysis of Perceived Benefits, Barriers, Severity to Mammography Screening for Sample of African American women (N=360).

Factor	Factor Loadings	Proportion of variance explained (eigenvalue)
		explained (eigenvalue)
3. Screening Relevance		
Breast cancer is personally (blank) to me.	0.525	
I think that a mammogram is an effective way to prevent breast cancer.	0.776	
I think that a breast self- exam is an effective way to prevent breast cancer	0.604	
In terms of my family background, my family background is a factor	0.569	
In terms of risk for breast cancer, age does not play a major factor	0.489	
4. Perceived Severity		
I worry about getting breast cancer (blank).	0.794	
Having a mammogram would expose me to unnecessary radiation	0.625	
5. Barrier to Action		
If I eat a healthy diet, I will lower my risk of getting cancer far enough that I probably do not need to have a mammogram	0.652	
I would probably not have a mammogram unless I had some breast symptoms or discomfort	0.554	
Mammograms have a high chance of leading to breast surgery that is not needed	0.468	

Table 6.
Subsequent analysis - Exploratory Principal Component Analysis of Health Involvement Factors (N=360).

Factor	Factor Loadings	Proportion of variance explained (eigenvalue)
Benefit to Screening		22.97
Having a regular mammogram gives me peace of mind about my health	0.836	
Having a mammogram every year will give me a feeling of control over my health	0.821	
A mammogram will help find breast cancer early	0.792	
When I get a mammogram, I don't worry so much about breast cancer	0.717	
Mammograms are helpful when you have one every year	0.715	
Having yearly mammograms will increase my chances of surviving if I get breast cancer	0.699	
Mammograms are necessary even when there is no history of breast cancer problems in a family	0.690	
People close to me will benefit if I have a mammogram	0.559	
Having a mammogram will help me find breast lumps early	0.559	
Having a mammogram will decrease my chances of dying from breast cancer	0.531	

Subsequent analysis- Exploratory Principal Component Analysis of Health Involvement Factors (N=360).

Factor	Principal Component Analysis of Heal Factor Loading	Proportion of Variance explained
		(eigenvalue)
Barrier to Screening		11.43
If I have a breast exam from a doctor or nurse, I don't need to have a mammogram	.766	
I would probably not have a mammogram unless I had some breast symptoms or discomfort	.673	
Once you have a couple of mammograms that are normal, you don't need to have any more for a few years	.523	
If a mammogram finds something, then whatever is there will be too far along to do anything about it anyway	.506	
Third Factor		10.31
I would probably not have a mammogram if my doctor expressed even a little doubt whether I really needed one	.543	
Cancer Worry		9.01
I worry about getting breast cancer blank	0.749	
Having a mammogram would expose me to unnecessary radiation	0.732	
Mammogram Effectiveness		8.43
If I eat a healthy diet, I will lower my risk of getting cancer far enough that I do not need to have a mammogram	0.830	
Mammograms have a high chance of leading to breast surgery that is not needed.	0.611	

Table 7. Exploratory Principal Factor Axis Analysis of Spirituality Scale (N=360).

Table 7. Exploratory Principal Factor	Factor Loadings	Proportion of variance explained
		(eigenvalue)
Life Satisfaction (EWB)		15.49
I feel good about my future	0.828	
I feel a sense of well-being about the direction my life is headed in	0.718	
I feel very fulfilled and satisfied with life	0.680	
I have a personally meaningful relationship with God	0.485	
Disconnection with God/Higher Power (RWB)		14.58
I don't find much satisfaction in private prayer with God	0.652	
Life doesn't have much meaning	0.644	
I don't have a personally satisfying relationship with God	0.471	
I don't get much personal strength and support from my God	0.437	
Connection with God (RWB)		12.58
I believe that God loves me and cares about me	0.962	
I feel that life is a positive experience	0.722	
My relationship with God helps me not to feel lonely	0.480	
I feel most fulfilled when I'm in close communication with God	0.429	10.28
Life Purpose (EWB)		
I believe there is some real purpose for my life	0.767	
My relationship with God contributes to my sense of well-being	0.758	

Exploratory Principal Factor Axis Analysis of Spirituality Scale (N=360).

Factor	Factor Loading	Proportion of Variance explained (eigenvalue)
Life Dissatisfaction		9.59
I believe that God is impersonal and not interested in my daily situations	0.778	
I don't enjoy much about life	0.365	

Table 8. Descriptive Statistics of Sample Demographics

Demographics	N	Percentage
Age (18-69)	60	100%
Marital Status Married	22	38.7
Single Divorced	28 5	46.7 8.3
Widowed Separated	2 3	3.3 5.0
Total:	60	100%
Education Less than High School High School Graduate Some College College Graduate Advanced College Degree Total:	5 11 25 11 8	8.3 18.3 41.7 18.3 13.3
Income Below \$10,000 \$10,000-14,999 \$15,000-24,999 \$25,000-\$34,999 \$35,000-\$49,999 \$50,000 and above	10 3 9 8 13 17	16.7 5.0 15.0 13.3 21.7 28.3
Total:		10070

Table 9. Mean Attitude, Memory and Behavior Intent Scores for Health Involvement

Variable	N	M	SD	t
Ab (No Cross) Low-Involved High-Involved	29 31	11.22 11.12	2.35 2.19	.165
Ab (Cross) Low-Involved High-Involved	29 31	11.50 11.42	2.36 2.34	.133
Aad (No cross) Low-Involved High- Involved	29 31	14.53 14.40	2.37 2.00	.224
Aad (Cross) Low-Involved High-Involved	29 31	16.19 16.19	2.26 2.51	-1.08
Ab Memory (No Cross) Low-Involved High-Involved	29 31	3.07 3.39	1.85 2.15	611
Ab Memory (Cross) Low-Involved High-Involved	29 31	3.07 3.42	1.83 2.06	694

Table 9 Continued

Variable	N	M	SD	t
Aad Memory (No Cross)	00	10.10	4.40	224
Low-Involved High-Involved	29 31	10.48 10.21	1.43 2.08	604
Aad Memory (Cross) Low-Involved	29	9.56	1.93	604
High-Involved	31	9.84	2.37	.004
Behavior Intention (No Cross)				
High-Involved Low-Involved	29 31	8.53 8.62	3.37 3.28	103
Behavior Intention (Cross)				
High-Involved Low-Involved	29 31	9.30 9.29	2.93 3.44	008

^{*}p <.05, **p<.01, ***p<.001

Table 10. Means, Standard Deviations and Correlations for Spirituality

Variable	М	SD	R
1. Aad/no cross	14.46	2.17	.169
Aad/cross	15.86	2.38	.548
2. Ab/no cross	11.17	2.25	.214
Ab/cross	11.45	2.32	.142
3. Brand Memory No Cross	3.23	2.00	064
Brand Memory Cross	3.25	1.95	.710
4. Ad Memory/No Cross	10.35	1.76	.997
Ad Memory/Cross	9.70	2.15	.323
5. Behavior Intention/No Cross	8.58	3.29	.208
Behavior Intention/Cross	9.30	3.16	.543

Table 11. Repeated Measures ANOVA Summary Table Main and Interaction Effects for Religiosity on Health Involvement for Attitude toward the Ad (Significant Main Effect)

Source	df	SS	MS	F
Between Subjects	59	27559.41		
Health Involvement	1	2.16	2.16	.25
Within Subjects	120	94.66		
Religiosity	1	57.69	57.69	35.35***
RXHI	1	4.68	4.68	2.86

^{*}p <.05, **p<.01, ***p<.001

Table 12. Repeated Measures ANOVA Summary Table Testing Main and Interaction Effects for Religiosity on Health Involvement for Behavior Intention (Significant Main Effect)

(Significant Mai				_
Source	df	SS	MS	F
Between Subjects	59	9572.52		
Health Involvement	1	.067	.067	.003
Within Subjects	120	101.62		
Religiosity	1	15.77	15.77	9.00*
RXHI	1	.050	.050	.028

^{*}p <.05, **p<.01, ***p<.001

Table 13. Repeated Measures ANCOVA Summary Table Testing Main and Interaction Effects for Religiosity on Health Involvement Controlling for Spirituality (Significant Main Effect)

Source	df	SS	N/C	
		33	MS	F
Between Subjects	59	30.092		
Health Involvement	1	3.31	3.31	.42
Within Subjects	120			
Religiosity	1	1.45	1.45	8.35*
R X Spirit (covariate)	1	1.53	1.53	8.75*
R X HI (interaction)	1	.054	.054	.312

Figure 7. Counterbalance of 12 packets of advertisements

Packets			
PACKET 1	PACKET 2	PACKET 3	PACKET 4
Ad 1 -cross Ad 2 - cross Ad 3 - cross Ad 4 - no cross Ad 5 - no cross Ad 6 - no cross	Ad 6 -cross Ad 1 - cross Ad 2 - cross Ad 3 - no cross Ad 4 - no cross Ad 5 - no cross	Ad 5 –cross Ad 6 – cross Ad 1 – cross Ad 2 – no cross Ad 3 – no cross Ad 4 – no cross	Ad 4 -cross Ad 5 - cross Ad 6 - cross Ad 1 - no cross Ad 2 - no cross Ad 3 - no cross
PACKET 5	PACKET 6	PACKET 7	PACKET 8
Ad 3 –cross Ad 4 – cross Ad 5 – cross Ad 6 – no cross Ad 1 – no cross Ad 2 – no cross	Ad 2 -cross Ad 3 - cross Ad 4 - cross Ad 5 - no cross Ad 6 - no cross Ad 1 - no cross	Ad 1 - no cross Ad 2- no cross Ad 3 - no cross Ad 4 - cross Ad 5 - cross Ad 6 - cross	Ad 6 - no cross Ad 1- no cross Ad 2 - no cross Ad 3 - cross Ad 4 - cross Ad 5 - cross
PACKET 9 Ad 5 - no cross Ad 6- no cross Ad 1- no cross Ad 2 - cross Ad 3 - cross Ad 4 - cross	PACKET 10 Ad 4 - no cross Ad 5 - no cross Ad 6 - no cross Ad 1 - cross Ad 2 - cross Ad 3 - cross	PACKET 11 Ad 3 - no cross Ad 4 - no cross Ad 5 - no cross Ad 6 - cross Ad 1 - cross Ad 2 - cross	PACKET 12 Ad 2 - no cross Ad 3 - no cross Ad 4 - no cross Ad 5 - cross Ad 6 - cross Ad 1 - cross

Figure 8. Histogram – Memory of the Brand with a Cross

Histogram

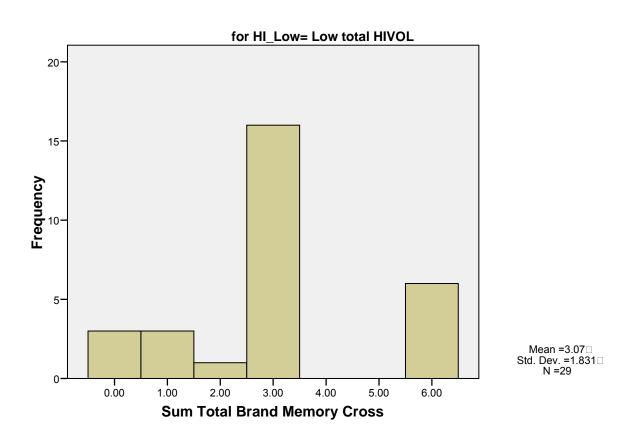


Figure 9 – Memory of the Brand without a Cross

Histogram

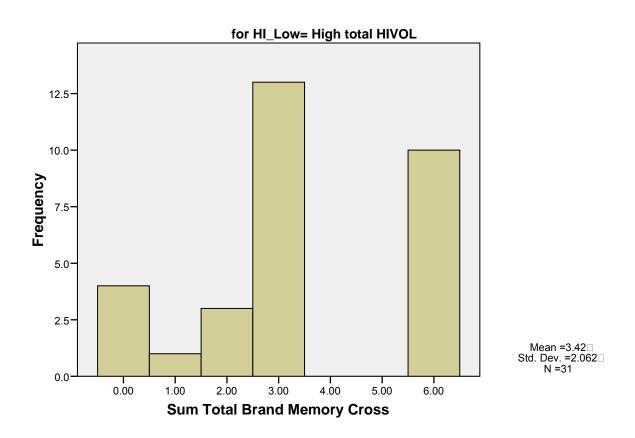


Figure 10. Q Plot for Memory of the Brand with a Cross

Normal Q-Q Plot of Sum Total Brand Memory Cross

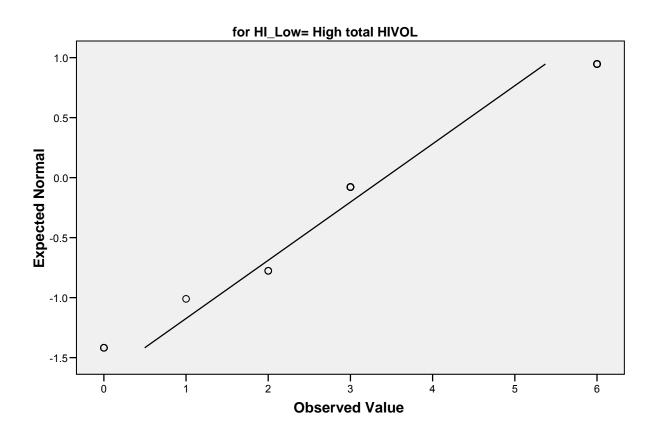


Figure 1. Flow chart of the elaboration likelihood model.

Petty & Cacioppo (1986). Communication and persuasion: Central and peripheral routes to attitude change. Springer-Verlag, New York, Inc.

Figure 2. The health belief model.

Witte, K., Meyer, G. Martell, D. (2001). *Effective health risk messages: A step-by-step guide*. Thousand Oaks. Sage Publications.

<u>Appendix A – Questionnaire One – Pilot Study</u>

Number #001

Please fill out the following demographic information:

Age		
, 190		

Married Status

- 1. Married
- 2. Single
- 3. Divorced
- 4. Widowed
- 5. Separated
- 6. Other

Please indicate your education level. Circle **one** of the following:

- 2. Less than high school
- 3. High School graduate
- 4. Some college or technical school
- 5. College graduate
- 6. Advanced college degree

Please indicate your household **income**. Circle **one** of the following:

- 1. below \$10,000
- 2. \$10,000-14,999
- 3. \$15,000-24,999
- 4. \$25,000-34,999
- 5. \$35,000-49,999
- 6. \$50,000 and above

Please circle **one** of the selections to the following statements:

I think that a mammogram is an effective way to prevent breast cancer.

- (1) Yes
- (2) No
- (3) Not Sure

I think that a breast self-exam is an effective way to prevent breast cancer.

- (1) Yes
- (2) No
- (3) Not Sure

In terms of risk for breast cancer, age does not play a major factor.

- (1)Yes
- (2)No
- (3)Not Sure

In terms of my family background, my family background is a factor.

- (1)Yes
- (2)No
- (3)Not Sure

Please indicate on a scale from 1 to 4 with 1 being the least and 4 being the most, how often you pay attention to breast cancer information in the media (for example, television, radio, newspaper or magazines) – Please circle **one**:

- (1) Not at all to
- (2) A little
- (3) Some
- (4) A lot

Please circle **one** of the following that indicates how long ago you had a mammogram:

- (1) Recently to 6 Months ago
- (2) Between 6 and 12 Months
- (3) Between 12 and 18 Months
- (4) Between 18 Months and 2 years
- (5) Between 2 and 3 Years ago
- (6) Between 3 and 4 Years
- (7) 4 Years or longer
- (8) Not Sure

Please circle **one** of the following that indicates how long ago you did a breast self-exam:

- (1) Recently to 6 Months ago
- (2) Between 6 and 12 Months
- (3) Between 12 and 18 Months
- (4) Between 18 Months and 2 years
- (5) Between 2 and 3 Years ago
- (6) Between 3 and 4 Years
- (7) 4 Years or longer
- (8) Not sure

Please circle **one** of the following that indicates your intention of being screened for breast cancer in the future:

- (1) Within the next few days or weeks
- (2) Next Month or Within the next few months
- (3) Within the next six months
- (4) Within the next year
- (5) Not sure

Please circle **one** the selections that most resembles your reactions to the following statements:

I am afraid to find out something is wrong when I have the mammogram. Very Quite Neither likely Quite Very likely likely nor unlikely unlikely unlikely Having a mammogram would expose me to unnecessary radiation. Very Neither likely Verv Quite Quite likely nor unlikely unlikely unlikely likely I think I am to get breast cancer during my lifetime. Quite Neither likely Quite Verv Verv likely likely nor unlikely unlikely unlikely

I read about or talk about breast cancer _____.

Almost 1-2 times Once a month Every few Almost every day each week months never

I worry about getting breast cancer . .

Almost 1-2 times Once a month Every few Almost every day each week months never

Breast cancer is personally to me.

Very Quite Neither important Not Not at all important important important important important

Having a mammogram will help me find breast lumps early.

Very Quite Neither likely Quite Very likely likely nor unlikely unlikely unlikely

Having a mammogram will decrease my chances of dying from breast cancer.

Very Quite Neither likely Quite Very likely likely nor unlikely unlikely unlikely

Please circle **one** response to the following statements that range from strongly disagree (1) to strongly agree (5):

People close to me will benefit if I have a mammogram.

- (1) Strongly Disagree
- (2) Disagree
- (3) Somewhat Disagree
- (4) Agree
- (5) Strongly Agree

Mammograms are helpful when you have one every year.

- (1) Strongly Disagree
- (2) Disagree
- (3) Somewhat Disagree
- (4) Agree
- (5) Strongly Agree

Having a mammogram every year will give me a feeling of control over my health.

- (1) Strongly Disagree
- (2) Disagree
- (3) Somewhat Disagree
- (4) Agree
- (5) Strongly Agree

Mammograms are necessary even when there is no history of breast cancer problems in a family.

- (1) Strongly Disagree
- (2) Disagree
- (3) Somewhat Disagree
- (4) Agree
- (5) Strongly Agree

Having a regular mammogram gives me peace of mind about my health.

- (1) Strongly Disagree
- (2) Disagree
- (3) Somewhat Disagree
- (4) Agree
- (5) Strongly Agree

A mammogram will help find breast cancer early.

- (1) Strongly Disagree
- (2) Disagree
- (3) Somewhat Disagree
- (4) Agree
- (5) Strongly Agree

Having yearly mammograms will increase my chances of surviving if I get breast cancer.

- (1) Strongly Disagree
- (2) Disagree
- (3) Somewhat Disagree
- (4) Agree
- (5) Strongly Agree

When I get a mammogram, I don't worry so much about breast cancer.

- (1) Strongly Disagree
- (2) Disagree
- (3) Somewhat Disagree
- (4) Agree
- (5) Strongly Agree

If I have a breast exam from a doctor or nurse, I don't need to have a mammogram.

- (1) Strongly Disagree
- (2) Disagree
- (3) Somewhat Disagree
- (4) Agree
- (5) Strongly Agree

Mammograms have a high chance of leading to breast surgery that is not needed.

- (1) Strongly Disagree
- (2) Disagree
- (3) Somewhat Disagree
- (4) Agree
- (5) Strongly Agree

Once you have a couple of mammograms that are normal, you don't need to have any more for a few years.

- (1) Strongly Disagree
- (2) Disagree
- (3) Somewhat Disagree
- (4) Agree

(5) Strongly Agree

I would probably not have a mammogram if my doctor expressed even a little doubt about whether I really needed one.

- (1) Strongly Disagree
- (2) Disagree
- (3) Somewhat Disagree
- (4) Agree
- (5) Strongly Agree

If I eat a healthy diet, I will lower my risk of getting cancer far enough that I probably do not need to have a mammogram.

- (1) Strongly Disagree
- (2) Disagree
- (3) Somewhat Disagree
- (4) Agree
- (5) Strongly Agree

I would probably not have a mammogram unless I had some breast symptoms or discomfort.

- (1) Strongly Disagree
- (2) Disagree
- (3) Somewhat Disagree
- (4) Agree
- (5) Strongly Agree

If a mammogram finds something, then whatever is there will be too far along to do anything about it anyway.

- (1) Strongly Disagree
- (2) Disagree
- (3) Somewhat Disagree
- (4) Agree
- (5) Strongly Agree

Mammograms are not trustworthy because some facilities are better than others.

- (1) Strongly Disagree
- (2) Disagree
- (3) Somewhat Disagree

- (4) Agree(5) Strongly Agree

	Appendix A – Questionnaire #2 – Pilot Study
Questionna	aire #2
Number#_	

Thank you for your participation in this study. Please carefully read the following instructions.

Instructions:

We are soliciting your feedback on six breast cancer screening advertisements that have been created by a Mid-Missouri church, First Fellowship Community Church (FFCC), and will be used in local and regional magazines targeting African American women who are 18 and older.

First Fellowship Community Church or FFCC has a large percentage of African Americans and many of those individuals are African American women. The church has witnessed several cases of women who have had breast cancer and are trying to raise awareness about prevention and breast cancer screening.

In your packet, you will find a questionnaire after all six advertisements in which you are asked to rate each advertisement and answer questions immediately following the ad. Your opinion is valuable as FFCC is hoping to sponsor advertisements in efforts to reach African American women concerning breast cancer prevention.

Please do not go back to the preceding pages. Also choose one answer per question. This will enable the researcher to capture your first impressions and reactions to the advertisements.

Please name	the church th	at sponsored	this advertisement:	

Please select the church that would like your help with sponsoring future ads that will target African American women with breast cancer messages:

- 1) Willow Creek Christian Church
- 2) First Fellowship Community Church
- 3) Rising Star Community Church
- 4) Lakewood Christian Church

ŀ	Please describe the breast cancer advertisement that was just viewed:										
_											

Please identify the design of the advertisement that most supported the breast cancer screening message:

- 1) The Colors
- 2) The Cross
- 3) The People
- 4) The Artwork

Please identify the main message of the advertisement

- 1) Women should be screened to detect breast cancer
- 2) African American women should be screened to detect breast cancer
- 3) Women should wait to be screened until after 40
- 4) Breast cancer screening can detect cancer early

Please identify the individual or individuals featured in the advertisement

- 1) A husband and wife
- 2) A doctor or nurse
- 3) A Churchgoer
- 4) A Mother
- 5) A Friend
- 6) A Breast Cancer Survivor

Please place a *check* in the space where you would rate First Fellowship Community Church and its efforts to sponsor this advertisement targeting African American women about breast cancer.

1) Not Credible I-----I Credible

2) Not believabl	le I	- -			-l Belie	vable			
3) Not Trustworthy III Trustworthy									
Please rate the advertisement overall on a scale from 1 to 7 with bad being 1 and 7 being good – Please circle one per question:									
1) Bad	1	2	3	4	5	6	7	Good	
2) Negative	1	2	3	4	5	6	7	Positive	
3) Unfavorable	1	2	3	4	5	6	7	Favorable	
Please indicate how much time you spent with the advertisement on a scale from 1 to 7 with 1 being strongly agree and 7 being strongly disagree-please circle <i>one</i> per question:									
1) I paid attention	on to th	e conte	ent of t	he ad.					
Strongly agree	1	2	3	4	5	6	7 Stro	ongly disagree	
2) I carefully rea	ad the	content	of the	ad.					
Strongly agree	1	2	3	4	5	6	7 Stro	ongly disagree	
3) When I saw t	he ad,	I conce	entrate	d on its	conte	nts.			
Strongly agree	1	2	3	4	5	6	7 Stro	ongly disagree	
4) I expended e	ffort lo	oking a	t the c	ontent	of this	ad.			
Strongly agree	1	2	3	4	5	6	7 Stro	ongly disagree	

Please indicate the likelihood you would do the following on a scale from 1 to 5 with 1 being unlikely to 5 very likely:

1)				od that nity Ch	-	uld loo	k for more information about First			
Unlike	ly	1	2	3	4	5	Very likely			
2)					you wo adverti:		commend that your church t?			
Unlik	ely	1	2	3	4	5	Very likely			
3)					you wo nmunity		e to seek out additional information ch?			
Unlike	ly	1	2	3	4	5	Very likely			
4)	4) What is the likelihood that you would like to visit First Fellowship Community Church's website?									
Unlike	ly	1	2	3	4	5	Very likely			
5)					-		nate money to First Fellowship efforts?			
Unlike	ly	1	2	3	4	5	Very likely			

Please indicate on a scale from 1 to 4 with 1 being not at all and 4 being a lot, how often do you pay attention to breast cancer information in the media (for example, television, radio, newspaper or magazines) – Please circle *one*:

- (1) Not at all
- (2) A little
- (3) Some
- (4) A lot

Please circle *one* of the following that indicates how long ago you had a mammogram:

- (9) Recently to 6 Months ago
- (10) Between 6 and 12 Months
- (11) Between 12 and 18 Months
- (12) Between 18 Months and 2 years
- (13) Between 2 and 3 Years ago
- (14) Between 3 and 4 Years
- (15) 4 Years or longer
- (16) Not Sure

Please circle *one* of the following that indicates how long ago you did a breast self-exam:

- (9) Recently to 6 Months ago
- (10) Between 6 and 12 Months
- (11) Between 12 and 18 Months
- (12) Between 18 Months and 2 years
- (13) Between 2 and 3 Years ago
- (14) Between 3 and 4 Years
- (15) 4 Years or longer
- (16) Not sure

Please circle *one* of the following that indicates your intention of being screened for breast cancer in the future:

- (6) Within the next few days or weeks
- (7) Next Month or Within the next few months
- (8) Within the next six months
- (9) Within the next year
- (10) Not sure

Please read the following statements and circle *one* that you *most* agree with:

	Strongl Modera gree				MD -	isagree Moderately Disagree Strongly Disagree
1)	I don't	find m	uch sa	tisfactio	on in pı	rivate prayer with God.
	SA	MA	Α	D	MD	SD
2)	I don't	know	who I a	am, whe	ere I ca	ame from, or where I am going.
	SA	MA	Α	D	MD	SD
3)	I belie	ve that	God lo	oves m	e and o	cares about me.
	SA	MA	Α	D	MD	SD
4)	I feel t	hat life	is a po	ositive e	experie	nce.
	SA	MA	Α	D	MD	SD
5)	I belie	ve that	God is	simper	sonal a	and not interested in my daily situations.
	SA	MA	Α	D	MD	SD
6)	l feel ι	unsettle	ed abo	ut my fu	uture.	
	SA	MA	Α	D	MD	SD
7)	I have	a pers	sonally	meanir	ngful re	elationship with God.
	SA	MA	Α	D	MD	SD
8)	I feel v	ery ful	filled a	nd satis	sfied w	ith life.
	SA	MA	Α	D	MD	SD
9)	I don't	get m	uch pe	rsonal s	strengt	h and support from my God.
	SA	MA	Α	D	MD	SD

1	0)I feel	a sens	se of w	ell-bein	g abou	t the direction my life is headed in.					
	SA	MA	Α	D	MD	SD					
1	1)I beli	eve tha	it God	is conc	erned a	about my problems.					
	SA	MA	Α	D	MD	SD					
1:	2)I don	't enjoy	much	about l	ife.						
	SA	MA	Α	D	MD	SD					
1	13)I don't have a personally satisfying relationship with God.										
	SA	MA	Α	D	MD	SD					
1	4)I feel	good a	about n	ny futur	e.						
	SA	MA	Α	D	MD	SD					
1	5)My re	elations	ship wit	h God	helps n	ne not to feel lonely.					
	SA	MA	Α	D	MD	SD					
1	6)I feel	that life	e is full	of con	flict and	d unhappiness.					
	SA	MA	Α	D	MD	SD					
1	7)I feel	most f	ulfilled	when I	m in cl	ose communication with God.					
	SA	MA	Α	D	MD	SD					
1	8)Life c	loesn't	have r	nuch m	eaning	l.					
	SA	MA	Α	D	MD	SD					
1	9)My re	elation	with Go	od cont	ributes	to my sense of well-being.					
	SA	MA	Α	D	MD	SD					

20)I believe there is some real purpose for my life

SA MA A D MD SD

How often do you usually attend religious services?

- 1) Never
- 2) Occasionally/ a few times a year
- 3) Once a month
- 4) A few times a month
- 5) Every week

Besides regular service, how often do you take part in other activities at your place of worship?

- 1) Never
- 2) Occasionally/ a few times a year
- 3) Once a month
- 4) A few times a month
- 5) Every week

^{*}This completes the second survey. Thank you for your time. Please return the survey to the researcher.

Appendix A – Spirituality Questionnaire

Spirituality Level (Ellison & Smith, 1991)

For each of the following statements circle the choice that best indicates the extent of your agreement or disagreement as it describes your personal experience:

			e gree		D – Disagree MD – Moderately Disagree SD – Strongly Disagree			
1.	I don't	find m	uch sa	tisfactio	on in pı	rivate prayer with God.		
	SA	MA	Α	D	MD	SD		
1.	I don't	know	who I a	ım, whe	ere I ca	ame from, or where I am going.		
	SA	MA	Α	D	MD	SD		
2.	I belie	ve that	God Ic	ves m	e and c	cares about me.		
	SA	MA	Α	D	MD	SD		
3.	I feel t	hat life	is a po	sitive 6	experie	nce.		
	SA	MA	Α	D	MD	SD		
4.	I belie	ve that	God is	imper	sonal a	and not interested in my daily situations.		
	SA	MA	Α	D	MD	SD		
5.	l feel ι	unsettle	ed abou	ut my fu	uture.			
	SA	MA	Α	D	MD	SD		
6.	I have	a pers	onally	meanir	ngful re	lationship with God.		
	SA	MA	Α	D	MD	SD		
7.	I feel v	very ful	filled a	nd satis	sfied w	ith life.		
	SA	MA	Α	D	MD	SD		

8	3. I don	it get n	nuch pe	ersonal	streng	th and support from my God.					
	SA	MA	Α	D	MD	SD					
g). I feel	a sens	se of w	ell-bein	ıg abou	t the direction my life is headed in.					
	SA	MA	Α	D	MD	SD					
1	0. I beli	eve tha	at God	is cond	erned a	about my problems.					
	SA	MA	Α	D	MD	SD					
1	11.I don't enjoy much about life.										
	SA	MA	Α	D	MD	SD					
1	2.I don	't have	a pers	onally	satisfyi	ng relationship with God.					
	SA	MA	Α	D	MD	SD					
1	3.I feel	good a	about n	ny futu	re.						
	SA	MA	Α	D	MD	SD					
1	4.My re	elations	ship wit	th God	helps n	ne not to feel lonely.					
	SA	MA	Α	D	MD	SD					
1	5. I feel	that lif	e is full	of con	flict and	d unhappiness.					
	SA	MA	Α	D	MD	SD					
1	6.I feel	most f	ulfilled	when I	l'm in cl	ose communication with God.					
	SA	MA	Α	D	MD	SD					
1	7. Life o	doesn't	have r	nuch m	neaning						
	SA	MA	Α	D	MD	SD					
1	8. My re	elation	with G	od cont	tributes	to my sense of well-being.					

SA MA A D MD SD

19.I believe there is some real purpose for my life.

SA MA A D MD SD

Appendix A - Questionnaire 1 (Actual Study)

Number #050

Please fill out the following demographic information:

1. Age	
--------	--

- 2. Married Status
 - 7. Married
 - 8. Single
 - 9. Divorced
 - 10. Widowed
 - 11. Separated
 - 12. Other
- 3. Please indicate your education level. Circle **one** of the following:
 - 1. Less than high school
 - 7. High School graduate
 - 8. Some college or technical school
 - 9. College graduate
 - 10. Advanced college degree
- 4. Please indicate your household **income**. Circle **one** of the following:
 - 1. below \$10,000
 - 2. \$10,000-14,999
 - 3. \$15,000-24,999
 - 4. \$25,000-34,999
 - 5. \$35,000-49,999
 - 6. \$50,000 and above

Please circle **one** of the selections to the following statements:

- 5. I think that a mammogram is an effective way to prevent breast cancer.
- (1) Yes
- (2) No
- (3) Not Sure
- 6. I think that a breast self-exam is an effective way to prevent breast cancer.
- (1) Yes
- (2) No
- (3) Not Sure
- 7. In terms of risk for breast cancer, age does not play a major factor.
- (1)Yes
- (2)No
- (3)Not Sure
- 8. In terms of my family background, my family background is a factor.
- (1)Yes
- (2)No
- (3)Not Sure
- 9. Using the scale below, indicate how often you pay attention to breast cancer information in the media (for example, television, radio, newspaper or magazines)

Not at all 1 2 3 4 A lot

- 10. Please circle **one** of the following that indicates how long ago you had a mammogram:
 - (17) Less than 6 Months ago
 - (18) Between 6 and 12 Months
 - (19) Between 12 and 18 Months
 - (20) Between 18 Months and 2 years
 - (21) Between 2 and 3 Years ago
 - (22) Between 3 and 4 Years
 - (23) 4 Years or longer
 - (24) Never
 - (25) Not Sure
- 11. Please circle **one** of the following that indicates how long ago you did a breast self-exam:
 - (17) Less than 6 Months ago
 - (18) Between 6 and 12 Months
 - (19) Between 12 and 18 Months
 - (20) Between 18 Months and 2 years
 - (21) Between 2 and 3 Years ago
 - (22) Between 3 and 4 Years
 - (23) 4 Years or longer
 - (24) Never
 - (25) Not Sure
- 12. Please circle **one** of the following that indicates your intention of being screened for breast cancer in the future:
 - (11) Within the next few days or weeks
 - (12) Next Month or Within the next few months
 - (13) Within the next six months
 - (14) Within the next year
 - (15) Not sure

Place a checkmark under the response that most closely matches how you feel about each statement:

	Very Unlikely 1	Quite Unlikely 2	Neither Likely or Unlikely 3	Quite Likely 4	Very Likely 5
13. I am afraid to find out something is wrong when I have the mammogram.					
14. Having a mammogram would expose me to unnecessary radiation.					
15. I think I am to get breast cancer during my lifetime.					
16. Having a mammogram will help me find breast lumps early.					
17. Having a mammogram will decrease my chances of dying from breast cancer.					

18. I read about or talk about breast cancer									
Almost every day	_	1-2 times Once a month each week				few is	Almost never		
19. I worry about getting breast cancer									
Almost every day		1-2 times Once a month each week				few is	Almost never		
20. Breast ca	ancer is perso	nally _	to me.	i					
Very important	Quite important		er important nimportant	tant	Not at				

Indicate the extent to which you agree/disagree with the following statements:

	Strong Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
21. People close to me will benefit if I have a mammogram.					
22. Mammograms are helpful when you have one every year.					
23. Having a mammogram every year will give me a feeling of control over my health.					
24. Mammograms are necessary even when there is no history of breast cancer problems in a family.					
25. Having a regular mammogram gives me peace of mind about my health.					
26. A mammogram will help find breast cancer early.					
27. Having yearly mammograms will increase my chances of surviving if I get breast cancer.					
28. When I get a mammogram, I don't worry so much about breast cancer.					
29. If I have a breast exam from a doctor or nurse, I don't need to have a mammogram.					
30. Mammograms have a high chance of leading to breast surgery that is not needed. 31. Once you have a couple of mammograms that are normal, you don't need to have any more for a					

few years.			
32. I would probably not have a mammogram if my doctor expressed even a little doubt about whether I really needed one.			
33. If I eat a healthy diet, I will lower my risk of getting cancer far enough that I probably do not need to have a mammogram.			
34. I would probably not have a mammogram unless I had some breast symptoms or discomfort.			
35. If a mammogram finds something, then whatever is there will be too far along to do anything about it anyway.			
36. Mammograms are not trustworthy because some facilities are better than others.			

Appendix A – Questionnaire 2 (Actual Study)

Questionnaire #2	
Number #	
Packet #	
Advertisement #	

Thank you for your participation in this study. Please carefully read the following instructions.

Instructions:

We are soliciting your feedback on six breast cancer screening advertisements that have been created by a Mid-Missouri church, First Fellowship Community Church (FFCC), and will be used in local and regional magazines targeting African American women who are 18 and older.

First Fellowship Community Church or FFCC has a large percentage of African Americans and many of those individuals are African American women. The church has witnessed several cases of women who have had breast cancer and are trying to raise awareness about prevention and breast cancer screening.

In your packet, you will find a questionnaire after all six advertisements in which you are asked to rate each advertisement and answer questions immediately following the ad. Your opinion is valuable as FFCC is hoping to sponsor advertisements in efforts to reach African American women concerning breast cancer prevention.

Please do not go back to previous pages once you have finished reading them.

Questionnaire	#2
Number #	
Packet #	
Advertisement	#

- 1. Do you recall the types of magazines the church is targeting to increase awareness of breast cancer among African American women? _____
- 2. Please select the church that is associated with the ad you just saw:
- 5) Willow Creek Christian Church
- 6) Lakewood Christ Church
- 7) First Fellowship Community Church
- 8) Rising Star Community Church
- 9) Willow Creek Christ Church
- 10)Lakewood Christian Church
- 11) First Fellows Community Church

3. Please write down everything that you can remember about the advertisement just viewed:							

3a. Select one of the following that best describes the attributes of the advertisement you just viewed:

- 1) Encouragement
- 2) Cancer Odds
- 3) Spousal Support4) Friendship Support
- 5) Empowerment
- 6) Personal Well-Being

4. Please circle the de breast cancer screening	_		lvertis	ement	that m	ost supported the
5) The Colors6) The Cross7) The People8) The Artwork9) None of the Above	/e					
5. Which of the following	ng syn	nbols	do you	recall	from t	he ad (circle ONE)?
5) Fish6) Cross7) Praying Hands8) Dove9) None of the Above	/e					
6. Which symbol asso	ciated	with th	is ad (circle	ONE)?	
7) Fish8) Cross9) Praying Hands10)Dove11)None of the above	⁄e					
7. Have you seen this 1) Yes 2) No 3) Not Sure	ad befo	ore?				
8. Rate the church in t that corresponds clos				_	ns by (circling the number
4) Credible	1	2	3	4	5	Not Credible
5) Bad	1	2	3	4	5	Good
6) Likeable	1	2	3	4	5	Not Likeable
7) Believable	1	2	3	4	5	Not Believable

8) Not Favorab	le	1	2	3	4	5	Favoi	rable	
9) Trustworthy		1	2	3	4	5	Not T	rustworthy	
9. Rate the ad you just saw on these items:									
1) Bad	1	2	3	4	5	6	7	Good	
2) Positive	1	2	3	4	5	6	7	Negative	
3) Not Favorable	1	2	3	4	5	6	7	Favorable	
4) Not Credible	1	2	3	4	5	6	7	Credible	
5) Trustworthy	1	2	3	4	5	6	7	Not trustworthy	
6) No religious angle	1	2	3	4	5	6	7	Religious angle	
7) Made me think think of religion	1	2	3	4	5	6	7	Did not make me think of religion	
8) Did not contain religion	1	2	3	4	5	6	7	Did contain religion	

10. Indicate the extent of your agreement/disagreement with the following statements:

5) I paid quite a lot of attention to the content of the ad.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

6) I care	fully re	ead the	conten	t of the	ad.					
Strongly Dis	agree	1	2	3	4	5	6	7	Strongly Agree	
7) When I saw the ad, I concentrated on its contents.										
Strongly Dis	agree	1	2	3	4	5	6	7	Strongly Agree	
8) I expe	ended	effort lo	ooking	at the c	ontent	of this	ad.			
Strongly Dis	agree	1	2	3	4	5	6	7	Strongly Agree	
11. Indicate	11. Indicate the likelihood you would do the following:									
6) What is the likelihood that you would look for more information about the church in this ad?								mation about the		
Unlikely	1	2	3	4	5	Very	likely			
		likeliho imilar ty					end tha	t yo	our church would	
Unlikely	1	2	3	4	5	Very	likely			
		likeliho nurch in			ould lik	e to se	ek out	ado	ditional information	
Unlikely	1	2	3	4	5	Very	likely			
	is the th in the		od that	you w	ould lik	e to vis	sit the c	hu	rch's website (the	
Unlikely	1	2	3	4	5	Very	likely			
10)What is the likelihood that you would donate money to the church in this ad to support these efforts?										
Unlikely	1	2	3	4	5	Very	likely			

- 12. Please indicate on a scale from 1 to 4 with 1 being not at all and 4 being a lot, how often do you pay attention to breast cancer information in the media (for example, television, radio, newspaper or magazines) Please circle one:
- (1) Not at all
- (2) A little
- (3) Some
- (4) A lot
- 13. Please circle *one* of the following that indicates how long ago you had a mammogram:
 - (1)Recently to 6 Months ago
 - (2)Between 6 and 12 Months
 - (3)Between 12 and 18 Months
 - (4)Between 18 Months and 2 years
 - (5)Between 2 and 3 Years ago
 - (6)Between 3 and 4 Years
 - (7)4 Years or longer
 - (8)Not Sure
 - (9)Never
- 14. Please circle *one* of the following that indicates how long ago you did a breast self-exam:
 - (1)Recently to 6 Months ago
 - (2)Between 6 and 12 Months
 - (3)Between 12 and 18 Months
 - (4)Between 18 Months and 2 years
 - (5)Between 2 and 3 Years ago
 - (6)Between 3 and 4 Years
 - (7) 4 Years or longer
 - (8)Not Sure
 - (9)Never
- 15. Please circle *one* of the following that indicates your intention of being screened for breast cancer in the future:
 - (16) Within the next few days or weeks
 - (17) Next Month or Within the next few months
 - (18) Within the next six months
 - (19) Within the next year
 - (20) Not sure

16. How often do you usually attend religious services?

- 6) Never
- 7) Occasionally/ a few times a year
- 8) Once a month
- 9) A few times a month
- 10)Every week

17. Besides regular service, how often do you take part in other activities at your place of worship?

- 6) Never
- 7) Occasionally/ a few times a year
- 8) Once a month
- 9) A few times a month
- 10)Every week

18. Rate these statements about spirituality on the following scale where SD= Strongly Disagree and SA = Strongly Agree: SD – Strongly Disagree MD – Moderately Disagree

D - Disagree

A – Agree

SA - Strongly Agree

	SD	D	MD	A	SA
I don't find much satisfaction in private prayer with God.	1	2	3	4	5
2. I don't know who I am, where I came from, or where I am going.	1	2	3	4	5
3. I believe that God loves me and cares about me.	1	2	3	4	5
4. I feel that life is a positive experience.	1	2	3	4	5
5. I believe that God is impersonal and not interested in my daily situations.	1	2	3	4	5
6. I feel unsettled about my future.	1	2	3	4	5
7. I have a personally meaningful relationship with God.	1	2	3	4	5
8. I feel very fulfilled and satisfied with life.	1	2	3	4	5
I don't get much personal strength and support from my God.	1	2	3	4	5
10. I feel a sense of well-being about the direction my life is headed in.	1	2	3	4	5
11. I believe that God is concerned about my problems.	1	2	3	4	5
12. I don't enjoy much about life.	1	2	3	4	5

	SD	D	MD	A	SA
13. I don't have a personally satisfying relationship with God.	1	2	3	4	5
14. I feel good about my future.	1	2	3	4	5
15. My relationship with God helps me not to feel lonely.	1	2	3	4	5
16. I feel that life is full of conflict and unhappiness.	1	2	3	4	5
17. I feel most fulfilled when I'm in close communication with God.	1	2	3	4	5
18. Life doesn't have much meaning.	1	2	3	4	5
19. My relation with God contributes to my sense of well-being.	1	2	3	4	5
20. I believe there is some real purpose for my life.	1	2	3	4	5

and which	s that you just v	viewed, pieas	e indicate whi	ch aus nau the	symbol of the cros

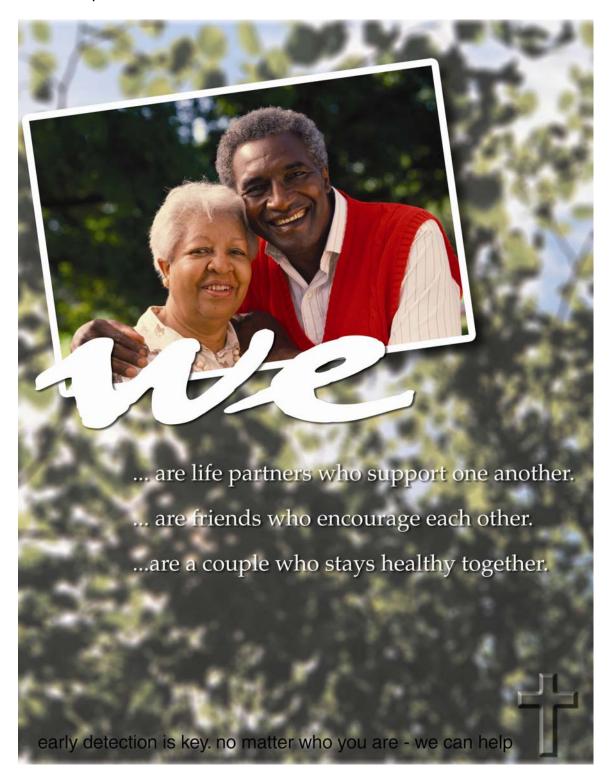
Ad B: Couple



They know that breast cancer is the most commonly diagnosed cancer among African American women and are ready to do something about it.

Robert is going with Angela to get a mammogram and hopes other men will encourage their loved ones to get tested early.

Ad C: Couple



Appendix C - Ads Used in Study

Advertisement One With Cross - "She"



... is a mother who teaches her daughter the importance of early detection.

... is a daughter who encourages her mother to get her annual mammogram.

... is a best friend who will encourage her to get screened for breast cancer.

early detection is key. no matter who you are - we can help.



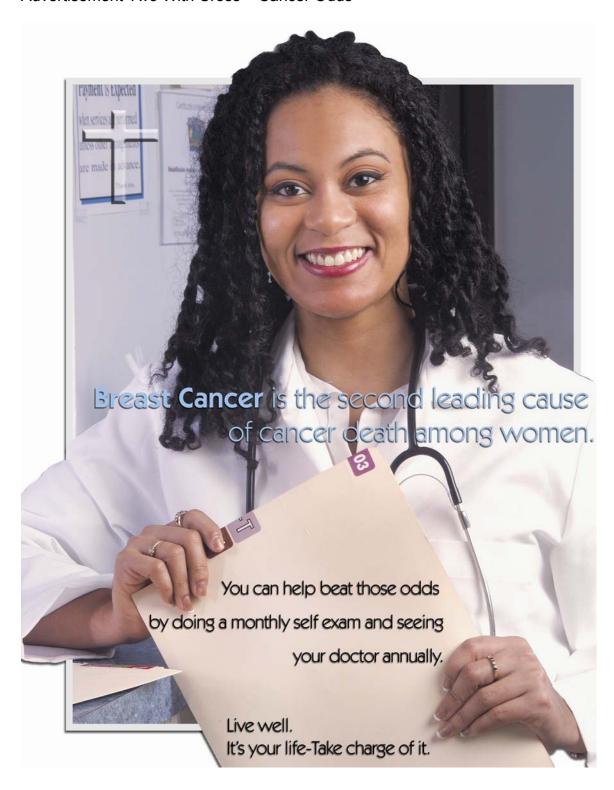
... is a mother who teaches her daughter the importance of early detection.

... is a daughter who encourages her mother to get her annual mammogram.

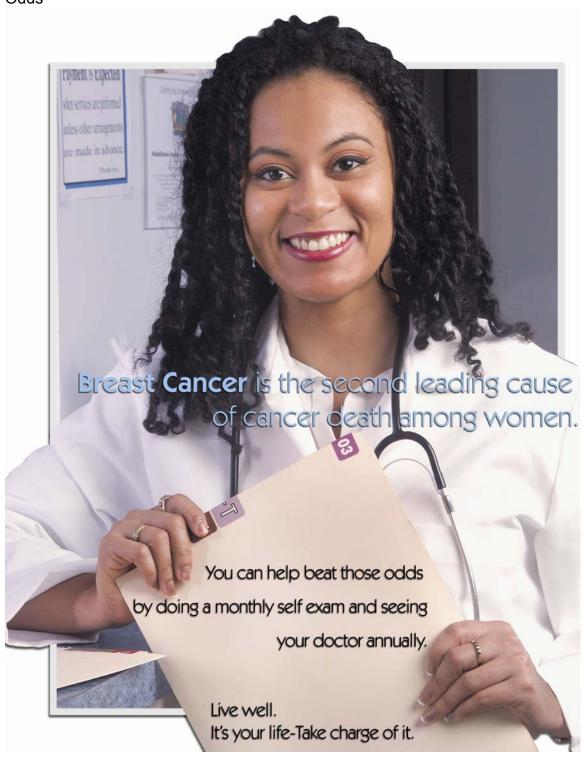
... is a best friend who will encourage her to get screened for breast cancer.

early detection is key. no matter who you are - we can help.

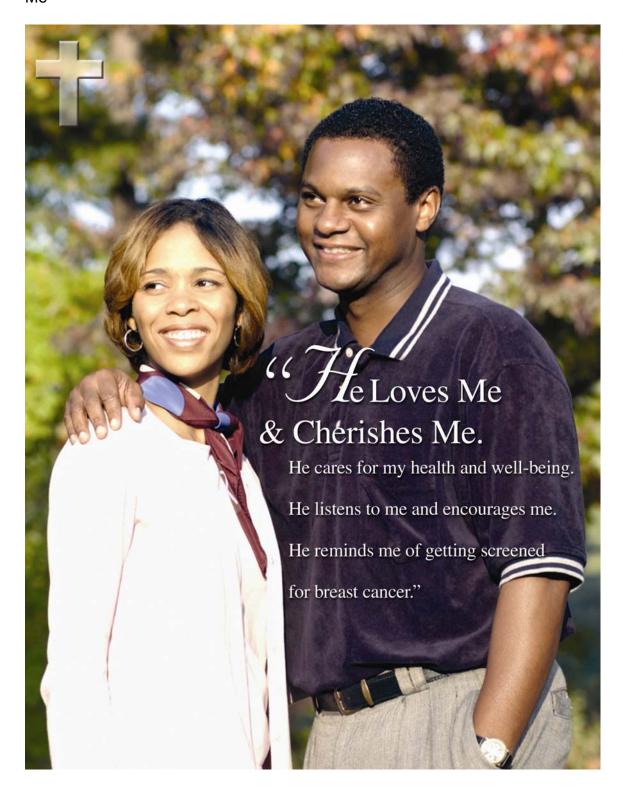
Advertisement Two With Cross - Cancer Odds



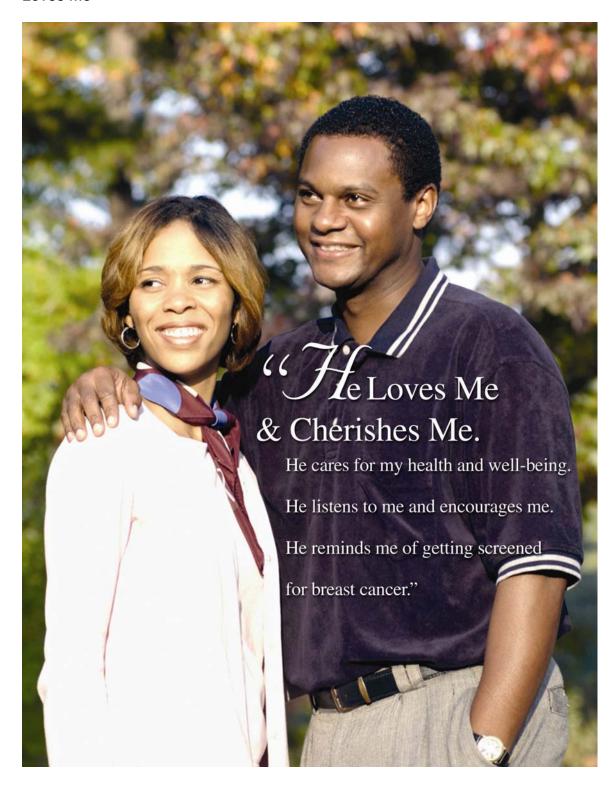
Advertisement Two Without Cross – Cancer Odds



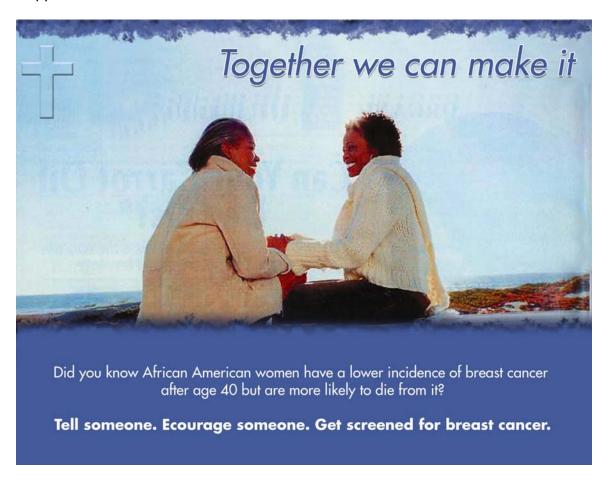
Advertisement three with cross – He Loves Me



Advertisement three without cross – He Loves Me



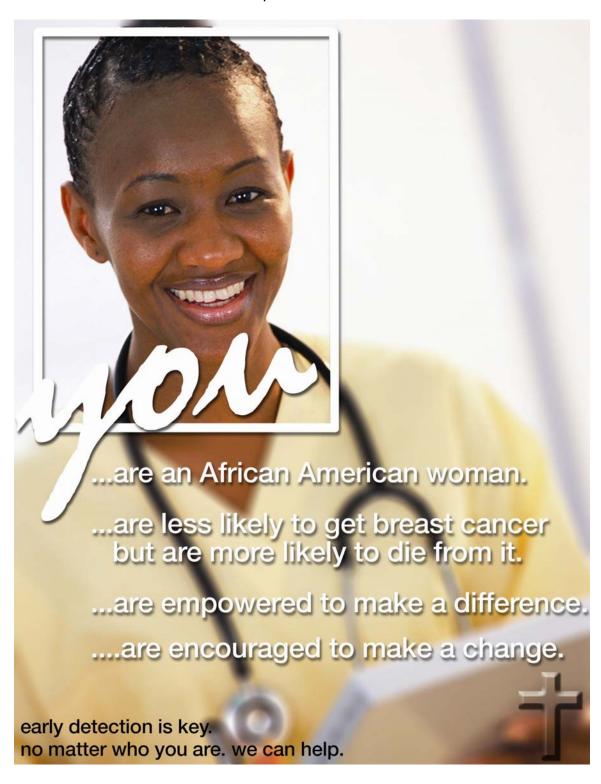
Advertisement four with cross – Friendship Support



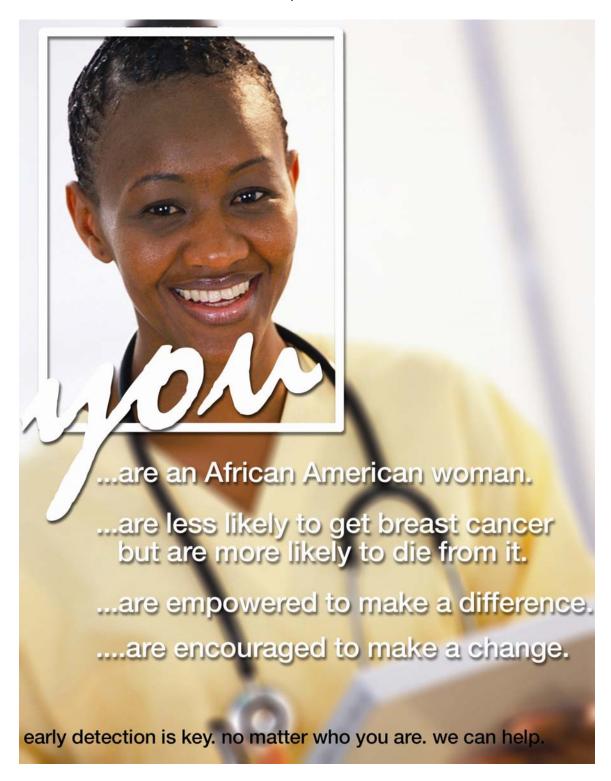
Advertisement four without cross – Friendship Support



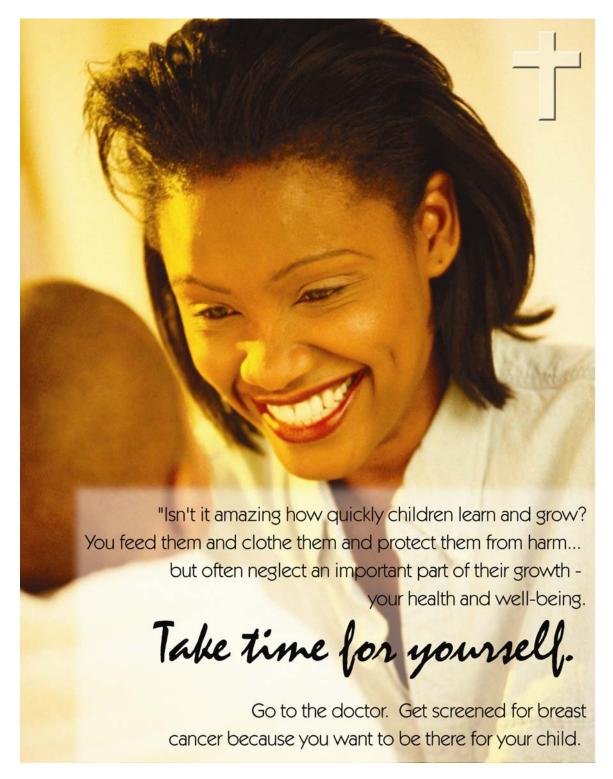
Advertisement five with cross – Empowerment



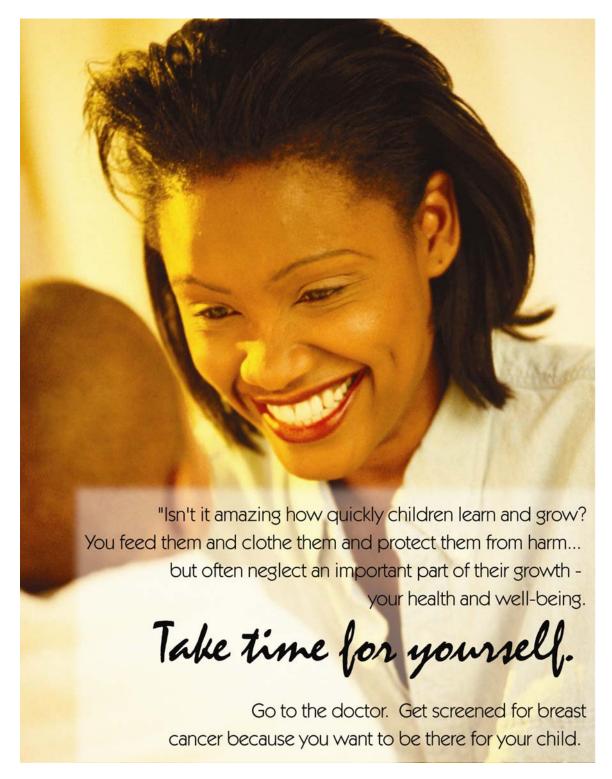
Advertisement five without cross – Empowerment



Advertisement six with cross - Take time for yourself



Advertisement six without cross - Take time for yourself



Vita

Crystal Yvette Lumpkins is currently an assistant professor of strategic communication at the William Allen White School of Journalism at the University of Kansas. As a doctoral student at the Missouri School of Journalism, she was a Gus T. Ridguel fellow and worked as a research assistant at the health communication research center with Dr. Glen T. Cameron, Maxine Wilson Gregory Chair, at the Missouri School of Journalism. There she collaborated with Dr. Cameron, other journalism and department of communication faculty in health communication research and an NCI funded cancer communication study with Dr. Matthew Kreuter at the School of Public Health in St. Louis, Missouri from 2004 to 2007.

Before pursuing her doctorate Crystal Lumpkins taught at Central Missouri State University in Warrensburg, Mo., as an assistant professor of communication in public relations; she was previously an adjunct instructor at area community colleges and universities. She also consulted with Mershon & McDonald public relations firm based in Kansas City, Missouri for one year.

Prior to her work as an educator, she was a media relations specialist at the University of Missouri-Kansas City from 1999-2003 and held various positions in television in Albuquerque, New Mexico, Topeka, Kansas, St. Joseph, Missouri and Kansas City, Missouri that included, promotions writer, associate producer and general assignment reporter positions from 1993-1998.