

**Psychological Well-Being and Preventive Care Use in Midlife
African-American Women**

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THESIS

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In memory of my mother, Gertrude Marie Henderson

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LIST OF ABBREVIATIONS

AARP	American Association of Retired Persons
AAW	African-American Women
ACIP	Advisory Committee on Immunization Practices
ACA	The Patient Protection and Affordable Care Act
AHA	American Heart Association
CDC	Centers for Disease Control and Prevention
EM	Effect modifier
HRSA	U.S. Health Resources and Services Administration
IOM	Institute of Medicine
IRRPP	Institute for Research on Race and Public Policy
KFF	Kaiser Family Foundation
PC	Preventive Care
PCS	Preventive Care Services
PWB	Psychological Well-Being
SEIU HCII	Service Employees International Union Healthcare Illinois Indiana
SBW	Strong Black Woman
SPWB	Scales of Psychological Well-Being
USPSTF	U.S. Preventive Services Task Force
WB	Well-Being
WWV	Well-Woman Visit

SUMMARY

Preventive care is underutilized in the U.S., resulting in increased morbidity, lost lives, and inefficient use of healthcare dollars. African-American women (AAW) are particularly at risk for deleterious health outcomes that might be mitigated through increased preventive care use. Psychological well-being (PWB) may provide an important target for interventions aimed at increasing timely utilization of preventive services. The objective of this study was to explore midlife (aged 40 to 64) AAW's perceptions and experiences of PWB and how these experiences affect their utilization of past and anticipated well-woman visits, flu vaccines, and mammograms. This mixed methods study was conducted with women from the Service Employees International Union - Healthcare Illinois Indiana headquartered in Chicago. Women participated in an online survey (n=124) that assessed their use of preventive services and well-woman visits, barriers and facilitators of preventive care use, and women's degree of PWB. One-on-one, in-depth, semi-structured interviews were conducted with a subsample of participants (n=19) that assessed the same constructs. Data were collected May to October 2016. Mixed methods results showed that community violence was a major threat to women's well-being and that emotional support and helping others greatly contributed to women's well-being. Spiritual beliefs and practices, as well as positive reframing of challenges were coping mechanisms that women employed to deal with stress. More knowledge of preventive care was associated with greater use of preventive care services and access to affordable insurance and positive provider relationships also facilitated women's use of preventive care. Influenza vaccine was the most misunderstood and least utilized preventive service. Findings from this study help

SUMMARY (continued)

elucidate a better understanding of the factors that impact the relationship between midlife African-American women's psychological well-being and use of preventive services. These findings may inform strategies to increase utilization, which will in turn positively impact disease and disability as this group of at-risk women age.

1. INTRODUCTION

1.1 Preventive Care and Clinical Preventive Services

One of the major criticisms of the U.S. healthcare system is its history of responding to disease instead of preventing it, which ultimately leads to exorbitant healthcare spending and inefficient care. Preventive care utilization is even more critical as Americans are living longer and doing so with more chronic conditions. Before 2014, chronic conditions accounted for 83% of total U.S. health spending, while prevention accounted for only 2 to 3% (Multack, 2013, p. 6). Further, 81 million Americans are projected to have more than one chronic condition by the year 2030 (Multack, 2013), and disability and physical function limitations are increasing in midlife adults (Martin & Schoeni, 2014).

Midlife adults who access preventive services are more likely to maintain health and independence in old age (Multack, 2013), which in turn can improve individuals' quality of life, lessen the need for caregivers, and decrease financial strain for individuals and the healthcare system. In an effort to address health disparities and improve health outcomes of Americans, the Patient Protection and Affordable Care Act (ACA) was enacted in 2010. Among its many provisions, the ACA provides coverage for preventive services without patient cost-sharing (no deductibles or out of pocket costs to patients). However, awareness of ACA coverage for preventive services is lagging (Salganicoff et al., 2014) and uncertainties with healthcare coverage under the Trump administration may further complicate awareness, access, and utilization of clinical preventive services. Still, increasing utilization and awareness of preventive services

among midlife adults may have a significant impact on improving quality of life and decreasing morbidity and healthcare spending as midlife Americans age.

Fewer than one in three women and one in three men aged 50 to 64 are up to date on select recommended clinical preventive services (Multack, 2013). Women may particularly be at risk of deleterious health from low preventive care use because they suffer disproportionate rates of chronic disease and disability compared to men; have unique conditions that are associated with reproductive health and care; and on average have lower incomes than men, resulting in increased strain from out of pocket healthcare costs (Institute of Medicine's Committee on Women's Clinical Preventive Services, 2011; Salganicoff et al., 2014). *Midlife* women may be at risk for under-utilization of preventive care due to less interaction with the healthcare system. Pregnant women are more likely to utilize well-woman visits than non-pregnant women (Institute of Medicine Committee on Women's Clinical Preventive Services, 2011). Thus, adult women who are past their child bearing years may be at risk for under-utilization of well-woman care.

Preventive care utilization saves lives and healthcare costs. Reports show that increasing use of preventive services could result in more than 2 million life-years saved annually (Maciosek et al., 2010). Additionally, increasing preventive service use to 90% for each of just four services (tobacco cessation screening, alcohol abuse screening, daily aspirin use, and colorectal cancer screening) could result in \$3.7 billion saved and 100,000 lives saved annually (Maciosek et al., 2010).

The U.S. Preventive Services Task Force (USPSTF), the Advisory Committee on Immunization Practices (ACIP), and the U.S. Health Resources and Services

Administration (HRSA) are charged with developing guidelines for preventive services required for adults. Guidelines for women are based on recommendations by the Institute of Medicine. The USPSTF assigns each service a letter grade based on benefit versus harm and clinical evidence of effectiveness of each service. The recommendations are based on individuals who have no signs or symptoms of the specified condition and on services that are only offered in primary care settings or referred by a primary care clinician (U.S. Preventive Services Task Force, 2014). The Task Force defines each grade as the following (U.S. Preventive Services Task Force, 2014, p.98):

- Grade A – service recommended, high certainty that the net benefit is substantial; service should be offered or provided
- Grade B – service recommended, high certainty that the net benefit is moderate and moderate certainty that the net benefit is moderate to substantial; service should be offered or provided
- Grade C – service selectively recommended to individual patients based on clinical judgment and patient preferences, there is at least moderate certainty of net benefit
- Grade D – service is not recommended, moderate to high certainty that there are no net benefits or harm outweighs benefit; service should be discouraged
- Grade I – current evidence is insufficient to weigh harm versus benefit of service and balance cannot be determined; if service is offered, patients should understand uncertainty of harms and benefits

This study will focus on well-woman visit, influenza vaccination, and mammography recommendations, which are preventive services classified as Grade A or Grade B.

1.2 Well-Woman Visits

Well-woman visits, also known as well-woman preventive visits, are age appropriate annual health assessments which focus on preventive care for women that include services such as physical exams, screenings, and education and counseling (U.S. Department of Health and Human Services, 2015a; Kaiser Family Foundation, 2015). The Institute of Medicine's (IOM) Committee on Preventive Services for Women (2011) was charged with providing guidelines and recommendations for preventive coverage offered by the ACA. Their report defines *preventive health services* to be “measures—including medications, procedures, devices, tests, education, and counseling—shown to improve well-being and/or decrease the likelihood or delay the onset of a targeted disease or condition” (Institute of Medicine, p. 3). They further define preventive services for women as (Institute of Medicine, p. 20):

Services that prevent conditions harmful to women's health and well-being. “Conditions” are considered diseases, disabilities, injuries, behaviors, and functional states that have direct implications for women's health and well-being. These conditions may be specific to women, such as gynecologic infections and unintended pregnancy; they may be more common or more serious in women, such as autoimmune diseases and depression; they may have distinct causes or manifestations in women, such as alcohol abuse, obesity, and interpersonal violence-related posttraumatic stress disorder; or they may have different outcomes in women or different treatments, such as cardiovascular disease and diabetes (IOM, 2010). To “prevent” is to forestall the onset of a condition; detect a condition at an early stage, when it is more treatable; or slow the progress of a condition that may worsen or result in additional harm. Preventive services may therefore include the provision of immunizations, screening tests, counseling and education, Food and Drug Administration- approved medications and devices, procedures, and over-the-counter medications and devices.

Preventive care can be categorized as primary (prevent a disease or condition before it occurs, such as immunizations); secondary (methods to identify and treat

disease at its earliest stage, such as cancer screenings); and tertiary (reduce the impact of a disease once it has developed and prevent related complications (such as disease management programs) (Centers for Disease Control and Prevention, 2013a; Holden et al., 2015). Women are expected to receive *at least* one annual visit to obtain preventive care services, with the understanding that care must be tailored to each woman and that some women may need more than one visit to cover all necessary care.

1.2.1 Well-Woman Visits and the Affordable Care Act

There are many systemic factors that have been shown to impede a woman's health; among the most salient are fragmented care and healthcare costs. Women's healthcare is often fragmented due to the tendency for women to see obstetrician/gynecologists (OB/GYNs) for issues related to their reproductive and sexual health and primary care physicians or specialists for all other issues. Due to this tendency, women often use more than one provider to obtain preventive care (Institute of Medicine, 2011), which can result in missed or lapsed services and follow-up. Women may also use their OB/GYNs as primary care providers, which may also result in missed services or diagnoses due to OB/GYNs being unable to provide care for conditions that do not fall under their clinical specialty. Additionally, findings from the 2013 Kaiser Women's Health Survey found that 26% of women delayed or went without curative or preventive care, 20% put off or postponed a preventive service, and 20% skipped a recommended medical test or treatment, all due to costs alone. African-American women (AAW) were the most likely to put off preventive care or skip a medical test compared to White or Hispanic women. For uninsured and low-income

women, these rates increase drastically. All of these factors indicate that more efforts will be needed to increase utilization of well-woman visits.

Passage of the ACA in 2010 offered the opportunity to provide health coverage to millions of uninsured and underinsured Americans. One regulation, effective August 2012, requires “group health plans and health insurance issuers offering health insurance coverage for groups or individuals (to) provide benefits and prohibit the imposition of cost-sharing requirements” for the provision of evidence-based preventive health care and screenings for women (Institute of Medicine, 2011, p. 16). The ACA sought to improve population health by providing clear guidelines on the type and timing of preventive services and offering reimbursement for provision of these services (Institute of Medicine, 2011). The ACA has begun to transform women’s health outcomes by increasing healthcare access to millions of women, ending gender-rating discrimination of insurance markets, eliminating exclusions for pre-existing health conditions, and eliminating out of pocket costs for preventive services (Institute of Medicine, 2011). A report by the Kaiser Family Foundation (Salganicoff et al., 2014) estimates that 55.6 million women (137 million total population) have received coverage for preventive services since the ACA expansion went into effect. However, as of March 2014, only 43% of men and women were aware of the no cost-sharing provision of preventive services of the ACA (Kaiser Family Foundation, 2015). While it is important to assess the long-term effects that increased access to clinical preventive services will have on women’s health outcomes and cost benefits, it is unclear how the Trump administration’s attempts to repeal and replace the ACA will impact women’s access to healthcare insurance and preventive care.

1.2.2 Well-Woman Visit Education and Counseling

It is important to note that well-woman visits do not only involve obtaining screenings and immunizations, but also involve counseling and education that is personalized to each woman's needs. In addition to receiving appropriate screenings and immunizations (and reviewing reproductive plans and contraception choices for reproductive age women, which typically includes women up to 45 years), a woman should receive age appropriate counseling and education based on her current health and family history, discuss factors such as current medications, life management and stress, substance use, sexual activity, diet and physical activity, and memory. She should also receive education on a number of factors such as healthy eating, breast and heart health, healthy relationships, safe sex, cancer risk factors, and receive needed resources or referrals to improve health. Finally, a woman should also be allowed to ask any questions she may have regarding her health and discuss prevention of future health problems, while a trusting relationship between her and her provider is built (National Women's Law Center, n.d.). Unfortunately, education and counseling opportunities during clinical encounters are often neglected (National Women's Law Center, n.d.). Missed or inappropriate education and counseling encounters are harder to quantify, but some qualitative and mixed methods studies reveal that these factors significantly affect midlife AAW's well-woman care seeking behaviors (Ackerson, 2010; Gatchell, 2012; McKenzie & Skelly, 2010; Nicolaidis et al., 2010; Matthews, 2015; Fowler, 2006).

1.3 Intra/Interpersonal Factors Associated with Preventive Service Use

There are a number of intrapersonal and interpersonal factors that have been shown to impact midlife adults' use of preventive services. The American Association of Retired Persons (AARP) Public Policy Institute (Multack, 2013) explains that barriers to preventive care use span structural, community, organizational, and personal levels. Structural, community, and organizational barriers include: fragmented care; healthcare costs/insurance; providers and systems that do not remind patients of preventive services when they are due or offer referrals or follow-up; providers who do not appropriately counsel patients on lifestyle modifications and compliance; and, providers who are not up to date on recommendation guidelines. Intra/interpersonal barriers also greatly contribute lapse in preventive care use. Many midlife adults do not access preventive care because: they cannot afford services or are uninsured; appointment structures and services are inconvenient or unpleasant; they have multiple healthcare providers; they possess low knowledge of recommended preventive services appropriate for their age and gender; and, they do not feel they are at risk for certain conditions. Many individuals are also not able to get time off from work to attend appointments, live in rural areas where providers are limited, or live in areas where public transportation is difficult or not accessible. Interpersonal factors that are cultural or social in nature can also be barriers to accessing preventive care. Language barriers, misperceptions about certain services and prohibitive beliefs, low health literacy, and mistrust of the healthcare system and providers have also shown to be major barriers to seeking and accessing care (Multack, 2013).

Studies that specifically explored midlife *African-American women's* perceptions and behaviors associated with seeking or accessing preventive care have found similar and varying intra/interpersonal barriers to receipt of preventive care. Ackerson (2010) found that misperceptions regarding the purpose of Pap tests, perceived risks for cervical cancer based on family history, and trauma contributed to negative perceptions and utilization of Pap tests. O'Malley et al. (2004) found that mistrust of the medical system and providers was also a major barrier to using recommended preventive services for a sample of 961 low-income AAW over age 40. This study concluded that strong patient-provider relationships may have a significant impact on improving adherence to preventive services. McKenzie & Skelly (2010) found that certain spiritual beliefs may negatively impact risk perceptions associated with chronic conditions. This study found that AAW with *strong* religious faith fluctuated between denial of a disease or its risk factors, and not claiming it (ignoring the disease or risks, "giving it over to God", or views that claiming a condition or its risks is looking at the negative versus positive). Beliefs such as these may significantly contribute to underuse of preventive care and may impact a woman's interpretation of health information (McKenzie & Skelly, 2010). Income and racial discrimination have also been investigated as barriers impacting preventive services use. In a study of 54,968 respondents, Trivedi & Ayanian (2006) found that the most common reasons associated with discrimination were insurance type, race, and income, and that individuals who experience discrimination may be less likely to receive preventive services. Gatchell (2012) found that low-income women reported more discrimination than others, but racial discrimination did not explain disparities in receipt of Pap tests.

Intra/interpersonal factors that facilitate women's use of preventive care services have also been identified in prior literature. A qualitative study conducted by Fowler (2006) with 30 AAW aged 52 to 71 found that women's decisions to obtain mammography screening were associated with: prior positive experiences with providers (usually female providers), which led to trust and respect of providers; understanding the benefits of adherence to treatment; and, caregiving responsibilities (wanting to get preventive care to be able to stay healthy to care for others). Interestingly, this study also found that literal, strict beliefs in God, cultural and familial misperceptions, and perceptions of being a strong woman were negatively associated with mammography screening. Another qualitative study conducted by Matthews (2015) with AAW aged 30 to 65 found that cervical cancer screening attendance was positively affected by knowledge of the purpose of cervical cancer screening, having a female examiner, and encouragement of family and friends, and concluded that increased knowledge among AAW could positively affect preventive care attendance rates.

It is plausible that most of the barriers discussed can be overcome with appropriate education, counseling, and relationship building with providers. Thus when understanding the factors that impact disparities in preventive care, it is not only necessary to look at screening and immunization rates, but also the content and quality of clinical encounters, and social factors, beliefs, attitudes, and knowledge of the women who are expected to use these services. These prior studies form the basis of intra/interpersonal contextual factors investigated in this current study.

1.4 Prevalence and Disparities Associated with Utilization

Disparities in the use of well-woman care vary across preventive care type (Edwards, 2011) and are greatly affected by socioeconomic status. The largest disparity in use exists between insured and uninsured women. A study conducted by AARP Public Policy Institute on preventive service use of midlife adults (Multack, 2013) found that in 2011, only 30% of women aged 50-64 were up to date on select preventive services (influenza vaccination within past year; mammogram within past 2 years; Pap test within past 3 years; home blood stool test within past year or colonoscopy/sigmoidoscopy within past 10 years), and rates were lowest among AAW and Hispanic women. Insured women in this age group were 3 times more likely to receive these preventive services than uninsured women. Thus, only 10% of uninsured women aged 50-64 received these preventive services (Multack, 2013). Additionally, midlife adults with low incomes and low educational attainment were more likely to *not* use preventive services than those with higher incomes and education (Multack, 2013) for *all* USPSTF recommended services.

As mentioned above, screening prevalence between women of different age groups and race/ethnicity varies by service type. Following is a discussion of the utilization and death rates for specific, prevalent conditions *that can be mitigated or prevented through screening*, which include: breast, cervical, and colorectal cancers; influenza and pneumococcal vaccines; and heart disease (including, high blood pressure, diabetes, cholesterol, diet, obesity, and physical activity). These conditions were chosen due to their large impact on morbidity and mortality of midlife AAW.

1.4.1 Cancer

In 2013, cancer was the leading cause of death in women aged 35-64 (Centers for Disease Control and Prevention, 2013) with breast cancer, the second-leading cause of cancer death among women and colorectal cancer, the third (Centers for Disease Control and Prevention, 2015). Breast, cervical, and colorectal cancers are most treatable when they are detected early. African-Americans had lower screening rates for all USPSTF recommended services than Whites in 2005 (National Commission on Prevention Priorities, 2007). Importantly, the gaps for cervical, breast, and colorectal screening have narrowed over the past 10 years. Although rates are below Healthy People 2020 targets, in 2010-2011, midlife AAW actually received breast and cervical cancer screenings at rates slightly higher than White women. This trend has remained. In 2015, AAW had the highest rates of breast and cervical cancer screening compared to any other racial/ethnic group (U.S. Department of Health and Human Services, 2015b). However, even with similar or higher screening rates, AAW are still more likely to die from breast, cervical, and colorectal cancers and have the shortest survival times than any other racial group. For example, while in 2015 AAW experienced 28.5 and 3.3 deaths per 100,000 from breast and cervical cancer respectively, White women experienced 20.4 and 2.2 deaths per 100,000 from breast and cervical cancer, respectively (U.S. Department of Health and Human Services, 2015b). In 2011, AAW in Chicago experienced 37 deaths from breast cancer per 100,000 (Institute for Research on Race and Public Policy, 2017).

All of these data suggest that increasing screening rates for these cancers is not making as deep of an impact on mitigating cancer-related morbidity and mortality as

would be expected; however, it is important to note that individuals from medically underserved populations are more likely to be screened and diagnosed in late stages of diseases that might have been cured or treated more effectively with earlier screening and diagnosis (National Cancer Institute, 2008). Therefore, it is not just important that AAW receive recommended cancer screenings, but that they receive *timely* screenings in order to obtain early detection, as a large proportion of cancer deaths are due to untimely screening or never being screened (National Cancer Institute, 2008). For example, in 2010, 50 to 70% of women *diagnosed* with cervical cancer had not received a Pap test ever or within the past 5 years (Ackerson, 2010). Other factors that contribute to disproportionate death rates from cancer in AAW are lack of medical coverage and unequal access to improved cancer treatments (U.S. Department of Health and Human Services, 2010; National Cancer Institute, 2008). Other research has shown genetic factors to also contribute to disparities in cancer incidence and mortality (National Cancer Institute 2008). As such, genetic counseling and screening for women who are at high risk for cancers is also regarded as an essential tool in early detection of cancers in AAW (Hoskins et al., 2006).

1.4.2 Influenza and Pneumonia

Flu and pneumonia *combined* are the 8th leading causes of death in the U.S. (Kochanek et al., 2015) and the 7th leading cause of death for African-Americans in Chicago (Institute for Research on Race and Public Policy, 2017). White women aged 45-64 die at a rate of 6.8 per 100,000 and AAW aged 45-64 die at a rate of 10 per 100,000 (National Center for Health Statistics, 2013) from flu and pneumonia. The Healthy People 2020 target for *influenza* vaccination is at least 70% of all adults. During

2010–11, among all adults, including those aged 18–49, 50–64, and ≥65 years, coverage remained lower among non-Hispanic blacks (28.1%, 38.4%, and 56.1%, respectively) than among non-Hispanic whites (31.6%, 45.7%, 67.7%, respectively) (Centers for Disease Control and Prevention, 2013d). Adults who are at risk of *pneumonia* include those who currently smoke, have diabetes, asthma, or cardiovascular disease, and are greater than 65 of age. In 2010-2011, among persons 50-64, pneumococcal vaccination rates were slightly lower among African-Americans (38.0%) than Whites (38.9%) (Multack, 2013). While the Healthy People 2020 target for pneumococcal vaccination is at least 80% of at risk adults, only 38.1% of all at risk midlife adults have received pneumococcal vaccination (Multack, 2013). Racial gaps in influenza and pneumococcal vaccination remain even after controlling for health insurance coverage and socioeconomic status (Multack, 2013).

1.4.3 Heart Disease

A report by the American Heart Association (AHA) (American Heart Association, 2015) reveals some staggering statistics related to heart disease. Heart disease is the number one cause of death in the U.S. and the number one killer of women. In 2011, African-American men, followed by AAW, had the highest mortality rate from heart disease; in that year, over 39,000 African-Americans died from heart disease. Heart disease can be prevented or mitigated through screening, education, and counseling about associated risk factors: physical activity, diet, obesity, cholesterol, high blood pressure, and diabetes. African-American women have the highest rate of high blood pressure of any population in the *world* and African-Americans and Hispanics have the highest burden of diabetes in the U.S. African-Americans are also more likely to die

from a stroke, diabetes, and heart disease than Whites (American Heart Association, 2015).

Screening rates for hypertension, cholesterol, and use of aspirin by African-Americans are all slightly lower than for Whites and rates for both groups are below Healthy People 2020 targets. Increased rates of morbidity and mortality due to heart disease in African-Americans have been attributed to lack of access to health insurance, lack of access to quality medical care, and poor patient-provider communication and relationships. Increased screening and awareness of risk factors associated with heart disease, as well as increased access to medical care, and access and adherence to medications may help to drastically improve health outcomes of AAW associated with heart disease (American Heart Association, 2015).

1.5 Psychological Well-Being

It is difficult to pinpoint concrete, universal definitions of well-being. Many researchers argue that well-being is subjective, culturally rooted, and may mean different things to different people, and thus can be defined in a variety of ways (Centers for Disease Control and Prevention, 2013e; Ryan & Deci, 2001; Substance Abuse and Mental Health Services Administration, 2015). Well-being, types of well-being, and similar concepts to well-being are often defined with respect to their components. Thus, the Centers for Disease Control and Prevention (2013e) define *well-being* as “assets in functioning, including positive emotions and psychological resources (e.g., positive affect, autonomy, mastery) as key components.”

The science of well-being utilizes many terms to describe this phenomenon such as health-related quality of life, flourishing, happiness, positive mental health, positive

affect, subjective well-being, and psychological well-being, among others (Centers for Disease Control and Prevention, 2013b). Some researchers view these terms as synonymous, whereas others feel they are distinct from each other. Although the Centers for Disease Control and Prevention (2013e) assert there is no single definition of well-being, they conclude that well-being “includes the presence of positive emotions and moods (e.g., contentment, happiness), the absence of negative emotions (e.g., depression, anxiety), satisfaction with life, fulfillment and positive functioning.” In addition, well-being is comprised of multiple domains: physical well-being, economic well-being, social well-being, emotional well-being, psychological well-being, life satisfaction, development and activity, domain specific satisfaction, and engaging activities and work (Substance Abuse and Mental Health Services Administration, 2015).

Deci and Ryan (2008) define well-being as optimal psychological experience and functioning. Some definitions of *psychological well-being* include: optimal functioning of an individual (Bolier et al., 2013); perceived thriving in the face of existential challenges of life (Keyes et al., 2002); and, positive mental health (Centers for Disease Control and Prevention, 2013b). This study will assess Psychological Well-Being using Ryff's Scales of PWB (SPWB), which measures these six dimensions. Ryff (1989, 1995) defined psychological well-being as positive functioning, which is comprised of 6 dimensions of wellness: 1) Self-Acceptance – positive evaluations of oneself and one's past life; 2) Personal Growth – a sense of continued growth and development as a person; 3) Purpose in Life – the belief that one's life is purposeful and meaningful; 4) Positive Relations with Others – the possession of quality relations with others; 5) Environmental

Mastery – the capacity to manage effectively one’s life and surrounding world; and, 6)

Autonomy – a sense of self-determination.

Although well-being can be measured and defined in many ways, concepts related to well-being have been shown to have many positive effects on mental and physical health. Positive well-being has been associated with:

- Protection against illness due to improved immune response (Cohen et al., 1995; Salovey et al., 2000)
- More engagement in positive health behaviors, like weight management, effective coping with threatening information, increased physical activity, more moderate smoking and drinking behaviors; and, increased perceptions of symptoms of illness (Aspinwall & Brunhart, 1996; Veenhoven, 2008).
- Increased ability to perform positive health behaviors and more confidence in these behaviors’ abilities to relieve illness (Salovey et al., 2000).
- Developing and establishing resources (e.g., social networks) that are likely to provide and maintain supportive and healthier living conditions (Fredrickson, 2001; Veenhoven, 2008). Happier people are more likely to have social relationships, which are also thought to affect the immune system positively, thereby preventing illness (Argyle, 1997).
- Ability to make better life choices which in turn decreases the likelihood of falling victim to distress (Veenhoven, 2008; Zautra et al., 2000). Positive emotions, including a sense of well-being can buffer against or protect against negative emotions, such as stress (Fredrickson, 2001).

- Cancer remission, health promoting behaviors, and high functional status and mobility (Murrell et al., 2003; Ostir et al., 2000).
- Greater physical health, more positive self-reported ratings of health, and longevity (Argyle, 1997; Ostir et al., 2000; Pressman & Cohen, 2005).

Many researchers parse well-being into two different types: hedonic and eudaimonic well-being. Hedonic well-being primarily stems from pleasure and happiness. Eudaimonic well-being stems from Aristotle's ideas of eudaimonia, and consists of living well, actualizing human potential and true nature, and emphasizes meaningfulness and growth (Bauer et al., 2008; Deci & Ryan, 2008). Subjective well-being (SWB) is often associated with hedonic well-being and is usually assessed with measures of positive affect, negative affect, and life satisfaction (Diener et al., 2006). On the other hand, psychological well-being is usually associated with eudaimonic well-being. However, both Subjective well-being and Psychological well-being have been shown to have positive impacts on health. A study conducted by Keyes et al. (2002), using data from Midlife in the U.S. (MIDUS) Survey, showed that SWB and PWB are conceptually related, yet empirically different.

Using Carol Ryff's Scales of Psychological Well-Being (SPWB), high and low characteristics of each construct are defined in Table I below. Ryff (1989) argued that early conceptions of well-being were not theory guided or empirically translatable, and that instruments traditionally used to measure well-being were developed for other purposes, yet became the standard measures of positive functioning. She asserted that prior formulations of well-being negated important aspects of positive psychological functioning, and hence developed the PWB scale. More than 25 publications have

evaluated the reliability and validity of the 6-factor scale and it has been widely used, appearing in over 350 publications and translated into 30 different languages (Ryff, 2013). Among these studies, PWB has been explored in development and aging, personality traits, family experiences, work and life engagement, health and biological research, and clinical intervention studies (Ryff, 2013).

Findings from Psychological well-being research have shown (for reviews see Ryff 1995; 2013):

- PWB is compromised in individuals with disabilities and illnesses, although gains or maintenance of PWB have been shown in the after-math of disease.
- Purpose in life is linked with reduced stroke and myocardial infarction.
- Aspects of PWB are associated with positive health behaviors, such as increased exercise, sleep, and weight management.
- Higher PWB predicts better biological regulation of stress hormones, inflammatory markers, and cardiovascular risk factors.
- Environmental mastery and autonomy increase with age, although accompanied by declines in purpose in life and personal growth.
- Women of all ages consistently report more positive relations with others and personal growth than men.
- Different aspects of family life show diverse outcomes in PWB. For example, greater involvement in family promotes well-being, whereas caring for an aging parent may compromise well-being, except for daughters with high environmental mastery. Consistently married individuals experience higher well-being than

TABLE I
HIGH AND LOW SCORER DEFINITIONS OF PWB DIMENSIONS, [REPRINTED
FROM RYFF, 1995]

Table 1. *Definitions of theory-guided dimensions of well-being*

Dimension	Characteristics of a high scorer	Characteristics of a low scorer
Self-acceptance	Possesses positive attitude toward self; acknowledges and accepts multiple aspects of self, including good and bad qualities; feels positive about past life	Feels dissatisfied with self; is disappointed with what has occurred in past life; is troubled about certain personal qualities; wishes to be different than what he or she is
Positive relations with other people	Has warm, satisfying, trusting relationships with others; is concerned about the welfare of others; is capable of strong empathy, affection, and intimacy; understands give-and-take of human relationships	Has few close, trusting relationships with others; finds it difficult to be warm, open, and concerned about others; is isolated and frustrated in interpersonal relationships; is not willing to make compromises to sustain important ties with others
Autonomy	Is self-determining and independent; is able to resist social pressures to think and act in certain ways; regulates behavior from within; evaluates self by personal standards	Is concerned about the expectations and evaluations of others; relies on judgments of others to make important decisions; conforms to social pressures to think and act in certain ways
Environmental mastery	Has sense of mastery and competence in managing the environment; controls complex array of external activities; makes effective use of surrounding opportunities; is able to choose or create contexts suitable to personal needs and values	Has difficulty managing everyday affairs; feels unable to change or improve surrounding context; is unaware of surrounding opportunities; lacks sense of control over external world
Purpose in life	Has goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for living	Lacks sense of meaning in life; has few goals or aims, lacks sense of direction; does not see purpose in past life; has no outlooks or beliefs that give life meaning
Personal growth	Has feeling of continued development; sees self as growing and expanding; is open to new experiences; has sense of realizing his or her potential; sees improvement in self and behavior over time; is changing in ways that reflect more self-knowledge and effectiveness	Has sense of personal stagnation; lacks sense of improvement or expansion over time; feels bored and uninterested with life; feels unable to develop new attitudes or behaviors

divorced, never married or widowed individuals, but single women tend to have higher autonomy and personal growth compared to married women.

- PWB is influenced by career pursuits, but varies depending on type of work pursued and is linked to family life.

Due to its empirical applicability and reliability, clearly defined and delineated dimensions, and ability to be assessed both quantitatively (scale) and qualitatively (defined constructs), Ryff's SPWB were chosen to assess psychological well-being in this study. Consistency of previously established patterns has also been tested in regard to age, gender and diverse ethnic/racial subgroups (Lashley, 2013; Ryff et al., 2004).

1.5.1 Risk and Protective Factors Associated with Psychological Well-Being

A number of risk and protective factors associated with PWB have been identified in prior literature. Research that examines associations between PWB and health has increased over the past decade, although less so with midlife minority populations. One of the first studies to look at racial/ethnic differences in PWB among midlife adults was a study conducted by Ryff et al. (2003). Ryff et al. (2004) used the 1995 Midlife in the United States (MIDUS) survey, a national survey of Americans aged 25 to 74 and city-specific racial subsamples of African-American (New York City), and Mexican-American (Chicago) respondents. The study aimed to investigate the relationships and interactions between race, gender, and education with PWB, and the role of discrimination as a moderator of relationships between these characteristics and PWB. Researchers found that minority status had a positive association with PWB in relation to self-acceptance, environmental mastery, and personal growth. These effects

remained even when education and perceived discrimination were included. Perceived discrimination had a negative association with PWB (personal growth, environmental mastery, autonomy, and self-acceptance) for White, African-American, and Mexican-American *women* (but not men) who perceived high levels of discrimination in their daily lives. Education was found to have a strong positive association of PWB (except for autonomy), which increased the positive associations of PWB with minority status even more when included in the model.

Two studies examined PWB using Ryff's PWB scale that included, but were not limited to, midlife AAW. Yang (2015) investigated the effects of racism on PWB in a large sample of 659 AAW (mean age 44.9) who also identified as caregivers. Yang found that AAW in the sample who experienced frequent racism had lower levels of PWB; racism was negatively associated with positive relations and environmental mastery, but positively associated with personal growth. Lashley (2013) used a mixed methods research design to explore middle-class AAW's (n=40, mean age 49.8) definitions and perceptions of happiness, self, PWB, and SWB as well as perceptions of these concepts in the midst of persistent economic downturns. She also tested the reliability of PWB and SWB measures in this population. Lashley found that happiness was largely related to connectedness with others and spirituality. She also found that the reliability of well-being measures extended to the sample, with the exception of autonomy. Overall, SWB was strongly correlated with overall PWB; participants fared moderately well on well-being measures with the exception of environmental mastery. Education and income levels were associated with purpose in life and environmental mastery.

Other studies have looked at varying factors affecting the PWB of midlife AAW. However, it must be noted that these studies are extremely sparse and measure PWB in varying ways, often using measures associated with SWB and PWB interchangeably or attempt to measure PWB by measuring factors that are actually associated with psychological distress or disorders or use samples that include, but are not limited to midlife AAW (Buchanan & Fitzgerald, 2008; Carrillo, 2002; Cutrona et al., 2000; L. Gibson & Parker, 2002; L. M. R. Gibson, 2000; Kwate et al., 2003; Lawson, 1999; Tangri et al., 2003). These studies focus on a range of subject areas including associations between PWB and neighborhood characteristics; sense of coherence, hope, and spiritual perspectives of breast cancer survivors; racial discrimination; life, personal, and work satisfaction; psychosocial risk and protective factors; and, racial and sexual harassment in the workplace.

1.5.2 Psychological Well-Being and Use of Preventive Care

A number of studies have found correlations between components of well-being and positive health behaviors; however, only two studies were found that directly examined the associations of facets of well-being and use of preventive healthcare services in midlife adults. Kim et al. (2014) hypothesized that individuals with higher purpose in life would be more likely to use preventive healthcare services. Using data from the Health and Retirement Study of Americans over 50 years of age (n=7,168), researchers found that each unit increase in purpose in life was associated with a higher likelihood of obtaining a cholesterol test or colonoscopy. Purpose in life was also associated with a higher likelihood of receiving a mammogram or Pap smear test in women and prostate exam in men. Another study by Kim et al. (2014) examined if

higher life satisfaction was associated with higher likelihood of using preventive healthcare services in adults over 50 years of age again using data from the Health and Retirement Study. These researchers found that although higher life satisfaction was not associated with higher likelihood of obtaining a flu shot, it was associated with higher likelihood of obtaining a cholesterol test, a mammogram, Pap smear, or breast exam in women, and a prostate exam in men.

To extensively understand how PWB may affect preventive health seeking behaviors, it is important to also explore how contextual factors associated with women's lived experiences may moderate associations. Factors such as income, housing, stress, early childhood experiences, caregiving responsibilities, social exclusion or isolation, occupation, education, and social support may positively or negatively impact mental health or PWB (Manderscheid et al., 2010). Negative factors are disproportionately distributed among minority populations, placing them at greater risk for negative mental health and physical health related to mortality (Manderscheid et al., 2010, p. 4); as such, these factors must be examined when studying the relationship between PWB and use of preventive care. This study will use mixed methodology to examine correlations between PWB and well-woman visit attendance and use of flu vaccines and mammograms, as well as factors that may moderate these relationships.

1.6 Statement of the Problem

Americans are living longer, but not healthier (Scommengna, 2013). The prevalence of chronic conditions has increased in the U.S. with the rising aging population (Multack, 2013). In addition, middle-aged or midlife Americans (40 to 64 years of age) are faced with rising disability levels and physical function limitations

(Martin & Schoeni, 2014; Scommegna, 2013). Midlife adults who access preventive services are more likely to maintain health and independence in old age (Multack, 2013). Currently, preventive care is underutilized in the U.S., which results in increased morbidity, lost lives, and inefficient use of health care expenditures (U.S. Department of Health and Human Services Health Resources and Services, 2011). Fewer than 1 in 3 midlife women are up to date on select preventive services recommended for their age and gender (Holden et al., 2015; Multack, 2013), and 19% of women 45 to 64 rate their health as fair or poor (Salganicoff et al., 2014).

AAW are particularly at risk for deleterious health outcomes that might be mitigated through increased and adherent preventive care use. Although *screening rates* for midlife African-American and White women are similar for colorectal, cervical, and breast cancer screening, white women are still reported to use more preventive services **overall** than any other race (Multack, 2013), although both rates are below Healthy People 2020 targets. Importantly, while rates for both groups for these three cancers are similar, AAW are more likely to die from these three cancers than any other race or ethnicity (Centers for Disease Control and Prevention, 2015; Kaiser Family Foundation, 2015). It is likely that increasing the *timeliness of* screening for midlife AAW will have a bigger impact on their health than for other populations, as increased mortality from these cancers appears to be due to later screening and diagnosis (National Commission on Prevention Priorities, 2007). Screening also presents an opportunity for women who are at high risk of certain cancers to obtain genetic counseling in order to detect genetic factors that also predispose AAW to certain

conditions and cancers (Hoskins et al., 2006). Clearly, the risk of morbidity and mortality associated with these cancers could be prevented or improved with earlier screening.

Additionally, midlife African-Americans are less likely to receive influenza and pneumococcal vaccinations than midlife Whites regardless of health insurance coverage and socioeconomic status. Midlife AAW are more likely than any other race or ethnic group to present with risk factors for heart disease and other chronic conditions such as obesity, poor glycemic control, hypertension, no leisure-time physical activity (Multack, 2013), and depression (Centers for Disease Control and Prevention, 2013b). Earlier screening and detection for AAW could not only help reduce death rates from cancer and other chronic conditions (U.S. Department of Health and Human Services, 2014), but also have a positive impact on the quality of their health and mortality (National Commission on Prevention Priorities, 2007). While identifying factors that increase the use of preventive care among all midlife adults is needed, it may be especially impactful in improving health outcomes for AAW.

Psychological and emotional well-being has been identified as 1 of 7 priority areas most likely to reduce the burden of the leading causes of preventable death and major illness by the U.S. National Prevention Strategy (Centers for Disease Control and Prevention, 2014). Healthy People 2020 also emphasizes health related quality of life and well-being as one of its four overarching goals (Centers for Disease Control and Prevention, 2013e). A number of studies have shown that various aspects of well-being can be reliably and meaningfully enhanced and some suggest that modifying well-being may enhance preventive health behaviors (Kim et al., 2014; Ogedegbe et al., 2012). Psychological well-being may provide an important target for interventions aimed at

enhancing and promoting positive health behaviors and health outcomes, including increased utilization of well-woman preventive care. However, very little is known about the role of psychological well-being in midlife African-American women's use of clinical preventive services.

1.7 Significance of the Study

Due to the significant underuse of preventive services in the U.S., it is important to identify factors that may increase awareness and use of preventive care services. Psychological well-being (PWB) may provide an important target for interventions aimed at enhancing and promoting positive health behaviors and health outcomes, including increased and timely utilization of preventive care. Initiatives that recognize the link between well-being and health prevention are burgeoning. In addition to the National Prevention Strategy and Healthy People 2020 mentioned earlier, a number of other public organizations have also begun to focus on well-being to improve health. The ACA, through the Prevention and Public Health Fund supports a focus on prevention and wellness through initiatives that strengthen the public's health through workplace and community wellness initiatives (U.S. Department of Health and Human Services, 2011). The Substance Abuse and Mental Health Services Administration (2015) in partnership with the Centers for Disease Control and Prevention (CDC), has also embarked on a number of initiatives aimed at enhancing awareness, reducing risks, and increasing health screenings by promoting wellness. CDC in its "Well-Being Concepts" report (2013e) recognizes the importance of well-being to public health. According to this report, acknowledging factors related to well-being allows for a more holistic approach to health promotion and prevention; well-being is a valid population outcome

that is meaningful to the public that can be measured with accuracy; well-being shows empirical evidence of positive health impacts; and, a focus on well-being can provide common metrics that can be used to compare and help shape policy.

A number of studies have shown that various aspects of well-being can be reliably and meaningfully enhanced. Factors associated with well-being have been shown to improve mortality and morbidity in many studies and many researchers have concluded that well-being protects against or prevents illness. Thus, a focus on well-being has many implications for public health promotion and prevention. However, in spite of the positive association between well-being and positive health outcomes, the link between PWB and WWV utilization is understudied.

2. THEORETICAL FRAMEWORK

The Behavioral Model of Health Services Use and Self-Determination Theory may help to explain predictive relationships between PWB and use of clinical preventive services. An integration of these two behavioral models forms the theoretical basis for the conceptual framework developed to explore relationships among constructs in this study.

2.1 Behavioral Model of Health Services Use

This model has gone through several iterations and phases since its initial debut in the 1960s and is intended to predict and explain individuals' use of health services. The initial model did not include systemic and environmental influences on use of health services and health outcomes and was solely focused on individual level determinants. The latest model (Phase 5) asserts that people's use of health services is based on their personal *predispositions* to use of services including: health beliefs (attitudes, values, and knowledge about health and health services); the factors that *enable* or impede use; their *need* for care; access to, utilization of, and the availability of resources of healthcare systems; national health policy; and their external environment (physical, political, economic). All of these factors contribute to a person's perceived health, clinical health status, and satisfaction (Andersen, 1995). Thus, the last iteration of the model also focuses on contextual characteristics, which include community and organizational level factors in addition to individual level factors. The model suggests that contextual characteristics may impact individual characteristics, which in turn may predict use of health services. Contextual and individual factors may also directly impact health outcomes. The model also suggests that health outcomes and use of health

services can in turn affect *predisposing, enabling, and need* characteristics (Andersen, 2008).

The contextual and individual constructs described in the Behavioral Model of Health Services Use resemble Socio-Ecological Model constructs. Behaviors and social, economic, and environmental conditions have been shown to have a greater impact on health and life span than what happens within the healthcare system (Multack, 2013) and these conditions span multiple levels. As stated earlier, previous research has found that factors such as health beliefs, transportation, inability to take off time from work, and unawareness can impact care seeking at the individual level. At an organizational level, systems that do not remind patients to seek services, are not up to date with respect to recent guidelines, and providers who are not trained to effectively counsel patients all serve as barriers to care. At a structural level, lack of health insurance and out-of-pocket costs have been major barriers to preventive care seeking (Multack, 2013; National Commission on Prevention Priorities, 2007). Thus contextual characteristics are also integral factors that may help explain associations between PWB and clinical preventive service use in midlife AAW.

2.2 Self-Determination Theory

Self-determination theory posits that individuals have an inherent desire to actualize their potential, strive for an authentic sense of self, and are naturally inclined to interconnect with others (Van den Broeck et al., 2008). Health behavior motivation can be viewed as a continuum from amotivation to controlled motivation to autonomous motivation. Controlled (extrinsic) motivation may come from sources such as external rewards and punishments, while autonomous (intrinsic) motivation results from sources

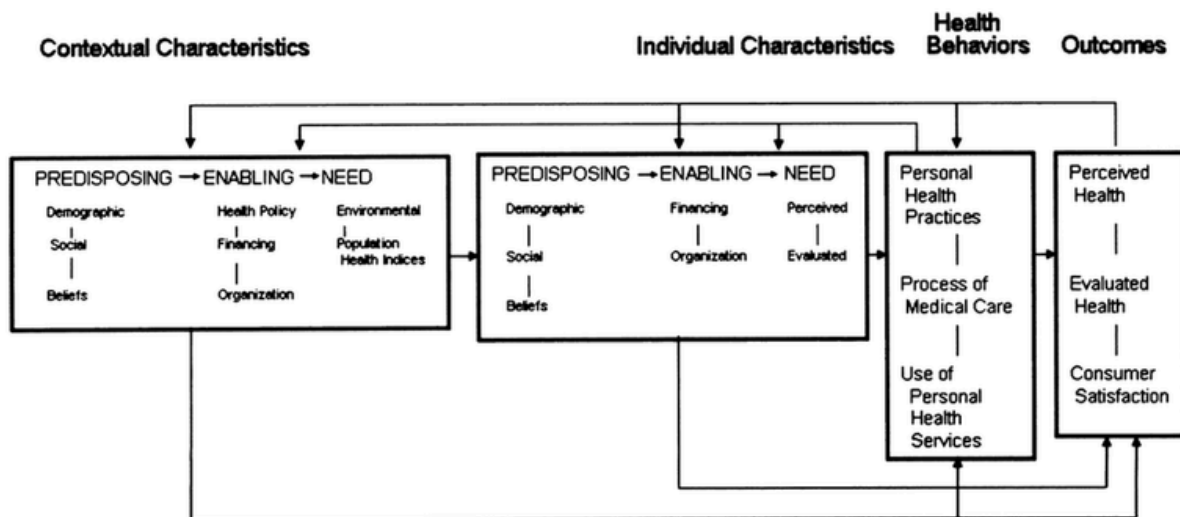
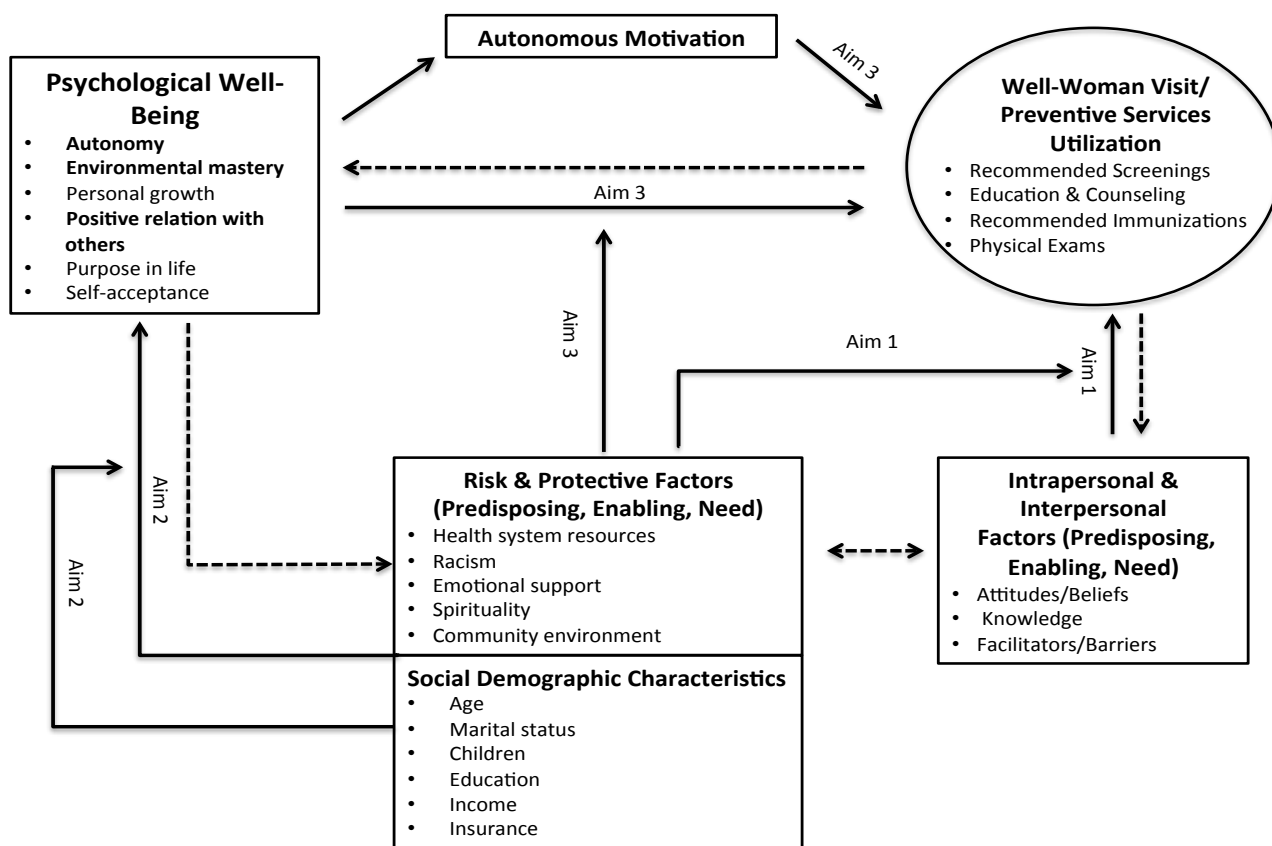


Figure 1. Phase 5 Behavioral model of health services use. [Reprinted from Andersen, 2008]

such as values, personal importance, and synthesis with self. An autonomously motivated, or self-determined person, likely has a high sense of well-being (Ryan & Deci, 2000). Autonomous motivation tends to yield greater psychological health, more effective performance, and the ability to maintain change toward healthier, lasting behavior (Deci & Ryan, 2008). Ryan and Deci (2000) explain that individuals have three basic needs that are essential for developing and maintaining optimal well-being: competence (capability to master environment and bring about desired outcomes); relatedness (connectedness to others); and, autonomy (ability to use or act in according to one's own will). These basic needs are provided by social environments and influenced by contextual and cultural factors (Ryan & Deci, 2001).

2.3 Integrated Conceptual Framework

Based on prior literature and the integrated theoretical foundations described above, PWB is hypothesized to be both directly and indirectly (through motivation) related to use of WWVs. However, PWB itself may be affected by and affect risk and protective factors and social demographic characteristics that in turn may impact a woman's need, desire, and ability (intra/interpersonal factors) to seek preventive care. Risk and protective factors and social demographic characteristics may also moderate the relationship between PWB and use of preventive services by altering a woman's ability to seek or obtain care and may by themselves directly impact preventive care utilization. Additionally, autonomous motivation may mediate the relationship between PWB and preventive service use. Although not examined in this study, preventive service utilization may directly impact interpersonal factors and women's PWB (represented by reversed dashed lines).



(-----) represents relationships not tested in this study

Figure 2. PWB and use of preventive services conceptual model.

3. STATEMENT OF STUDY PURPOSE AND SPECIFIC AIMS

The purpose of this study is to explore and understand midlife (aged 40 to 64) African-American women's perceptions and experiences of PWB and how these perceptions affect their utilization of well-woman preventive visits, and utilization of influenza vaccines and mammograms. It is anticipated that a better understanding of the factors that impact the relationship between women's PWB and use of these services may inform strategies to increase preventive care utilization tailored to the contexts of women's lives. The Institute of Medicine (2011) uses the term *well-woman preventive visit* to describe provision of clinical prevention services that are specific to women. This study will use the term well-woman visit (WWV) to describe provision of preventive care visits for women.

The following research aims, which involve both quantitative and qualitative approaches, will be used to explore the relationship between PWB and attendance at the well-woman visit, influenza vaccine, and mammogram utilization:

- *Aim 1: Explore the relationship between intra/interpersonal factors and past and anticipated use of WWVs, influenza vaccinations, and mammograms among midlife African-American women.*
 - *Purpose:* The objective of this aim is to establish the importance of intrapersonal and interpersonal factors (e.g., attitudes, knowledge, beliefs) associated with AAWs' use of WWVs, flu vaccines, and mammograms. It is theorized that intra/interpersonal factors have a direct relationship with preventive care use and that risk, protective, and social demographic

characteristics factors may act as confounders or effect modifiers in these relationships.

- *Aim 2: Understand the risk and protective factors that impact AAW's experiences of PWB and to understand the meaning of well-being for midlife African-American women.*
 - *Purpose:* To comprehensively understand the role of PWB in midlife AAW's lives, it is important to understand the risk and protective factors that promote or impede experiences of PWB of these women as they age. It is also necessary to examine how women define, cultivate, maintain, and experience PWB. The objective of this aim is to explore the relationship between risk and protective factors (adjusted for social demographic characteristics) and PWB in midlife AAW and to build a grounded meaning of well-being as a study construct.
- *Aim 3: Assess the relationships between overall PWB and use of WWVs, influenza vaccinations, and mammograms among midlife African-American women.*
 - *Purpose:* The objective of this aim is to explore the association between women's PWB and use of WWVs, flu vaccines, and mammograms adjusting for social demographic characteristics, as well as risk and protective factors. Autonomous motivation will also be explored as a mediator between PWB and use of preventive care services. Understanding the relationship between PWB and use of these services may inform intervention strategies to increase use of preventive care

among AAW that will positively impact morbidity and mortality in both midlife and later life.

4. METHODS

4.1 Research Approach

In order to obtain a more comprehensive view of the phenomena to be examined, this study used quantitative and qualitative methods to collect and analyze data. Each method supplements the inherent weaknesses of the other; using both approaches allows for a more thorough exploration of research aims and allows data to be triangulated across both methods (Creswell, 2014; Creswell & Clark, 2011).

Constructs assessed quantitatively were those that could be discretely measured with valid and reliable questions and instruments (i.e., PWB dimensions, beliefs, knowledge, use of well-woman visits and preventive services). Quantitative methods also allow for generalizations to a larger population. However, quantitative methods do not allow for the exploration of meaning, contexts, and perspectives of individuals; as such, qualitative data can augment quantitative data by adding details about context, settings, feelings, stories, and personal experiences. Therefore, qualitative assessments were used to measure dimensions of constructs that were contextual by nature and might be individually shaped by each woman's experiences (i.e., definition, construction, and maintenance of well-being, risk and protective factors for well-being, factors that affect each woman's PWB and use of well-woman visits/preventive services). Thus, using mixed methods enabled a more comprehensive exploration of the relationships being studied.

This study was conducted using a convergent parallel mixed methods design where quantitative data were collected first followed by collection of qualitative data; both quantitative and qualitative data were analyzed concurrently, but separately

(Creswell & Clark, 2011). The purpose of a convergent parallel design is to obtain data on a research topic using methods that are different, yet complimentary, and to triangulate methods by directly comparing and contrasting quantitative and qualitative findings in order to corroborate and validate results, as well as to render a more holistic, comprehensive understanding of the phenomenon being studied (Creswell & Clark, 2011). For example, qualitative results were used to explain significant, non-significant, outlier, and surprising quantitative results.

4.2 Quantitative Methods Overview

4.2.1 Sample Population

Women were recruited to participate in both the quantitative and qualitative aspects of this research from the Service Employees International Union - Healthcare Illinois Indiana (SEIU HCII) in Chicago. The SEIU HCII represents over 91,000 health workers in Illinois, Indiana, Missouri, and Kansas, who provide care for children, seniors, and individuals with disabilities. Many of the employees represented at SEIU HCII are minority women who are low wage earners. In the state of Illinois, SEIU HCII has 58,000 female members who are 40 to 64 years of age and has email addresses for 16,709 of these women. The SEIU HCII does not collect information on race/ethnicity; however, approximately 9000 of women with available email addresses reside in areas of Illinois with a high concentration of African-Americans. The SEIU HCII typically has an email response rate of 15-20 percent. This pilot study was exploratory in nature and did not involve formal hypothesis testing; therefore, formal power calculations to determine sample size were not used (Jones et al., 2003).

4.2.1.1 Eligibility

Participants were eligible for this study if they were African-American women who were 40 to 64 years of age, English literate, resided in Illinois, and were current members or had been members of SEIU HCII within the past 12 months (at the time of recruitment).

4.2.1.2 Recruitment & Data Collection Procedures

A Qualtrics generated survey link (that progressed to screening questions) was emailed to women whom SEIU HCII staff could determine a priori to be eligible based on their internal records as well as to women whose eligibility was not certain. SEIU HCII staff screened out members whom they were certain were not eligible (for example, men, non-Illinois residents). Email addresses were not released to the PI and were emailed by Blue State Digital, a company that SEIU HCII uses for large scale emailing. In order to verify eligibility, members were able to click on a link provided in the recruitment email if they agreed to answer screening questions. These screening questions ascertained race, gender, age, and zip code. Individuals who did not meet eligibility based on any screening question received a message stating that they were ineligible and would not be linked to informed consent information or survey questions. Those who met eligibility were forwarded to electronic informed consent information and if the participant consented to participate in survey, they were forwarded to the remainder of survey questions. IRB approval was obtained through UIC IRB on April 6, 2016.

Surveys were emailed in two waves due to a low response rate from the first wave. The first wave of surveys was emailed on May 11, 2016 to 4,176 women (21%

opened email and 2.9% clicked the screening link) and a reminder email was sent on May 18, 2016 to 4,166 women (same as original list minus unsubscribers; 13% opened the email and 2% clicked the screening link). The survey remained open for 4 weeks to give participants ample time to respond. Survey completion incentives in the form of three raffles were offered to survey participants to increase response rates. Raffles in the dollar amount of \$100, \$75, and \$50 were offered based on return date (the earlier the return date the greater the dollar amount of raffle). Survey participants were given the option to participate in raffle if they chose. They were asked to click on a Qualtrics link (within the survey) to leave their contact information (first name only, phone and email address) if they wished to participate. Raffle winners were drawn randomly.

In an effort to increase participation in surveys, the survey link was emailed again (wave 2), offering any participant who completed the survey (who had not previously completed survey in wave 1) a \$10 electronic Target gift card. Although IP addresses are not being tracked for study purposes, Qualtrics software automatically records IP addresses. Previous raffle entry names and IP addresses of participants who completed the survey in wave 1 were compared to names of participants who provided contact information and IP addresses in wave 2 to ascertain that participants had not completed the survey more than once. Wave 2 recruitment emails were sent on August 9, 2016 to 3743 women (same as original minus unsubscribers) and a reminder email was sent on August 17, 2016 to 3732 (minus unsubscribers). Wave 2 first recruitment emails were open by 21.9% of women; 0.2% clicked the screening link and reminder emails were opened by 19.2% of women; 0.4% clicked the screening link.

This study includes 124 women who completed the study survey. Of the 248 women who completed the pre-survey eligibility questionnaire, 181 women were eligible and consented to complete the study survey. Survey completion rates varied and in total, 124 women answered at least 60% or more of the survey questions.

4.3 Qualitative Methods Overview

4.3.1 Sample Size

Semi-structured, one-on-one, face-to-face interviews (n=19, one interview was conducted over the phone) were conducted with a subset of women who participated in the survey.

4.3.1.1 Eligibility

Women were eligible to participate in an interview if they were African-American, were 40 to 64 years of age, English literate, resided in *Chicago*, and were current members or had been members of SEIU HCII within the past 12 months (at the time of recruitment).

4.3.1.2 Recruitment

At the end of the quantitative survey, women residing in Chicago were: notified about their eligibility to participate in an interview, provided information about the interview's purpose and the stipend to be provided for time and travel costs, and asked to indicate their desire to participate in an interview. Women were provided a link within the survey to leave their first name only and contact information if they wished to participate in an interview. Thirty-nine women volunteered to participate in an interview. Each woman was contacted once by her individual preference (phone or email). Interviews were conducted from August 15, 2016 to October 15, 2016. Nineteen women

were confirmed to participate in an interview; all interviews were conducted in a private office at University of Illinois School of Public Health. Each woman received \$40 to compensate her for her time and travel costs. The woman who participated via phone was electronically sent \$40.

4.4 Study Variables

Table II describes all main variable names, types, scales of measurement and operations (independent variable, IV; dependent variable, DV; potential confounder; potential effect modifier, EM; or mediator) by aim. Abbreviated versions of this table are included under each aim that variables address.

Well-Woman Visit (WWV) attendance (past and anticipated) was assessed with original questions in the survey and was also assessed in Sections 3 and 5 of the qualitative interview guide. Past and anticipated WWV attendance were operationalized as dependent variables in Aim 1 and Aim 3.

Preventive Services included were past blood pressure screening, blood cholesterol screening, glucose screening, HIV test, mammogram, Pap smear, blood stool screening, flu vaccine, and pneumococcal vaccine. They were measured in the survey using questions adapted from previously validated questions (Centers for Disease Control and Prevention, 2013). Use of these services was also assessed in Sections 2, 4, and 5 of the qualitative interview guide. Ultimately, *only past use of flu vaccine and mammogram were assessed as dependent variables in Aim 1 and Aim 3*. Other preventive services listed above were assessed, but only described descriptively, and were not explored in any of the study aims.

TABLE II
ALL STUDY VARIABLES

Variable	Variable Type	Scale of Measurement	Variable Operation by Aim	QUANT	QUAL
Preventive Services Use					
Past well-woman visit use	Dichotomous	1= within past year 2= longer than past year	Aim 1 – DV Aim 3 – DV	✓	✓
Anticipated well-woman visit use	Dichotomous	1= 6 months to year 2= longer than 1 year	Aim 1 – DV Aim 3 - DV	✓	✓
Influenza vaccine	Dichotomous	1= within past year 2= longer than past year	Aim 1 – DV Aim 3 - DV	✓	✓
Mammogram	Dichotomous	1= within past 2 years 2= longer than past 2 years	Aim 1 – DV Aim 3 - DV	✓	✓
Intra/Interpersonal Factors					
Barriers to PC use	Dichotomous	0= zero barriers 1= any barriers	Aim 1 – IV	✓	✓
Beliefs about frequency of obtaining certain PC services	Dichotomous	0= low consistency (4 or fewer consistent out of 7) 1= high consistency (5+ consistent out of 7)	Aim 1 - IV	✓	✓
Knowledge of services based on provider consultation	Dichotomous	0= counseled on 6 or fewer (out of 12) 1= counseled on 7+ (out of 12)	Aim 1 - IV	✓	✓
Social Demographic Characteristics					
Age	Dichotomous	0= less than 50 1= 50+	Aims 1, 2, 3 – Potential Confounder/ EM	✓	✓
Marital status	Dichotomous	0= not married 1= married	Aims 1, 2, 3 – Potential Confounder/ EM	✓	
Education	Categorical	0= < high school 1= high school grad 2= some college 3= college grad	Aims 1, 2, 3 – Potential Confounder/ EM		
Income	Dichotomous	0= <\$30,000 1= \$30,000 or more	Aims 1, 2, 3 – Potential Confounder/ EM		
Children in household < 18	Dichotomous	0= zero children 1= any children	Aims 1, 2, 3 – Potential Confounder/ EM	✓	✓
Insurance	Dichotomous	0= no insurance 1= any insurance	Aims 1, 2, 3 – Potential Confounder/ EM	✓	✓
Risk & Protective Factors					
Primary care provider	Dichotomous	0= 1 provider 1= >1 or no provider	Aims 1, 3 – Potential Confounder/ EM Aim 2 - IV	✓	✓
Provider communication	Dichotomous	0= weak positive comm. 1= strong positive comm.	Aims 1, 3 – Potential Confounder/ EM Aim 2 - IV	✓	✓

TABLE II
ALL STUDY VARIABLES (continued)

Healthcare treatment based on race		0= no 1= yes	Aims 1, 3 – Potential Confounder/ EM	✓	✓
Impact of spirituality on PC use	Dichotomous	0= no 1= yes	Aims 1, 3 – Potential Confounder/ EM	✓	
Community impact on PC use	Dichotomous	0= no 1= yes	Aims 1, 3 – Potential Confounder/ EM	✓	✓
Emotional support	Dichotomous	0= sometimes/ rarely/ never 1= always/ usually	Aims 1, 3 – Potential Confounder/ EM Aim 2 - IV	✓	✓
Race-related emotional stress due to treatment of self	Dichotomous	0= no 1= yes	Aim 2 – IV Aim 3 - Potential Confounder/ EM	✓	✓
Race-related emotional stress due to treatment of others	Dichotomous	0= no 1= yes	Aim 2 – IV Aim 3 - Potential Confounder/ EM	✓	✓
Perceived community health	Dichotomous	0= unhealthy 1= healthy	Aim 2 – IV Aim 3 - Potential Confounder/ EM	✓	✓
Impact of spirituality on WB	Dichotomous	0= no 1= yes	Aim 2 – IV Aim 3 - Potential Confounder/ EM	✓	✓
Menopause	Dichotomous	0= not currently going through menopause 1= currently going through menopause	Aim 2 – IV Aim 3 - Potential Confounder/ EM	✓	✓
Psychological Well-Being					
Overall PWB composite score	Dichotomous	0= low PWB 1= high PWB	Aim 2 – DV Aim 3 - IV	✓	
Autonomous Motivation					
Autonomous motivation	Continuous	1= not at all true 4= somewhat true 7= very true	Aim 3 – Potential mediator	✓	✓

Intra/Interpersonal Factors were women's attitudes/beliefs, knowledge, facilitators, and barriers related to use of WWVs and preventive services. Measures of these variables were derived from previously validated sources (Centers for Disease Control and Prevention, 2013f; Keenan, 2010; National Association of County & city Health Officials; Brotons et al., 2012) and were also assessed in Sections 2, 3, and 4 of the qualitative interview guide. Intra/Interpersonal factors were operationalized as independent variables in Aim 1.

Social Demographic Characteristics included age, marital status, children in household, education, income, and insurance coverage and type. These questions were based on previously validated survey questions (Centers for Disease Control and Prevention, 2013) and were explored as potential confounders and effect modifiers in all three Aims.

Risk and Protective Factors were health system resources (primary care provider, quality of provider communication), perceived/experienced racism, emotional support, spirituality, and women's perceptions of community health. Measures of these variables were derived from previously validated sources (Centers for Disease Control and Prevention, 2013f; Morton & Edwards, 2012) and were also assessed in Sections 1, 2, and 3 of the qualitative interview guide. Risk and protective factors were explored as potential confounders and effect modifiers in Aim 1 and Aim 3 and as independent variables in Aim 2.

Overall Psychological Well-Being (PWB) was measured by Ryff's Scales of Psychological Well-Being (SPWB) (Ryff, 1989) and consists of six dimensions: autonomy, environmental mastery, personal growth, positive relations with others,

purpose in life, and self-acceptance. The original SPWB consists of 20 items for each of the 6 dimensions (120 items in total). Examples of items that measured each dimension are as follows: 1) Autonomy – *I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people*; 2) Environmental mastery - *In general, I feel I am in charge of the situation in which I live*; 3) Personal growth – *For me, life has been a continuous process of learning, changing, and growth*; 4) Positive Relations with Others – *Most people see me as loving and affectionate*; 5) Purpose in Life – *I enjoy making plans for the future and working to make them a reality*; and 6) Self-acceptance – *When I look at the story of my life, I am pleased with how things have turned out*. Each item was measured with a 6-point likert scale where 6=Strongly agree, 5=Agree somewhat, 4=Agree slightly, 3=Disagree slightly, 2=Disagree somewhat, and 1=Strongly disagree.

Consistency scores for each dimension range from 0.86 to 0.93. Due to concerns about scale length, Ryff subsequently reduced this scale to 14-item scales (84 items in total), 7-item scales (42 items in total), and 3-item scales (18 items in total). Validation and reliability testing yielded low consistency with the 3-item scales, while alpha coefficients remained high in the 7-item scales (Ryff & Keyes, 1995). For this reason, the 7-item scales were chosen for this study. Further, *this study will address aims 2 and 3 using a composite overall PWB score and not the scales for each dimension*.

Measurements for each dimension were assessed but only used descriptively. The following contextual factors related to PWB were also assessed in Sections 1 and 5 of the interview guide: meaning, barriers, facilitators, cultivation, and maintenance of well-

being. Overall PWB was operationalized as a dependent variable in Aim 2 and as an independent variable in Aim 3.

Autonomous Motivation was assessed in the survey using a measure adapted from the Treatment Self-Regulation Questionnaire (TSRQ). The purpose of the TSRQ (15 items) is to evaluate a person's motivation for a specific health behavior using 3 subscales that measure autonomous (or intrinsic) motivation (6 items), controlled (or extrinsic) motivation (6 items), and amotivation (no motivation, 3 items) (Williams et al., 1996). Items are assessed with values ranging from 1 to 7 where 1 is *Not at all true*, 4 is *Somewhat true*, and 7 is *Very true*. Examples of items for each subscale are as follows: The reason I would get preventive services is: 1) *Because I feel that I want to take responsibility for my own health* (autonomous motivation); 2) *Because I would feel guilty or ashamed of myself if I did not seek preventive care* (controlled motivation); 3) *I really don't think about preventive care* (amotivation). Autonomous motivation was tested as mediator between PWB and use of WWVs, flu vaccines, and mammograms in Aim 3. Because this study only examined the potential mediation role of autonomous motivation as a mediator, only items on the autonomous motivation subscale were used in analysis.

4.5 Quantitative Analysis by Aim

4.5.1 Aim 1 Intra/Interpersonal Factors Associated with Well-Woman Visit, Influenza Vaccination and Mammogram Use

4.5.1.1 Aim 1 Methods

Past and anticipated well-woman visit use, past influenza vaccination and mammogram were main dependent variables examined in Aim 1 (Table III). All 124

women answered questions about current and anticipated use of well woman visits, past flu vaccine, and mammogram use. For current use of well-woman visits, women were provided definitions of preventive care and well-woman visits, and women were asked: *About how long has it been since you last visited a doctor for a well-woman visit or preventive care?* Women who responded that they completed a visit within the past year (anytime less than 12 months prior to the survey date) were compared to women who responded that they completed a visit within the past 2 years or 5 years, had never had a visit, or were not sure when their last visit took place. For anticipated use of well-woman visits, women were asked: *When is the next time you plan on attending a Well-Woman Visit (or a yearly checkup, screening, or vaccine, etc.)?* Women who responded that they planned to attend a visit within the next 6 months to a year were compared to women who responded that they planned to attend a visit more than a year from now or were not sure. Preventative service use among women was assessed with the following yes/no questions: (1) *During the past 12 months, have you had either a flu shot or a flu vaccine that was sprayed in your nose?* (2) *Have you had a mammogram during the past 2 years?* Missing responses were assumed to represent “no” answers, and recoded as such. Women who received a flu vaccine within the past 12 months were compared to women who had received a flu vaccine longer than the past 12 months or never. Women who received a mammogram within the past 2 years were compared to women who had received a mammogram longer than the past 2 years or never.

In accordance with the AARP Public Policy Institute (Multack, 2013) and Centers for Disease Control and Prevention (2013c, 2012) reports on preventive service use in

midlife women, it was originally intended that use of preventive services would be assessed as a composite of being up-to-date with four select preventive services:

TABLE III
AIM 1 MAIN DEPENDENT VARIABLES

Variable	Variable Type	Scale of Measurement
Past well-woman visit use	Dichotomous	1= within past year 2= longer than past year
Anticipated well-woman visit use	Dichotomous	1= 6 months to year 2= longer than 1 year
Influenza vaccine	Dichotomous	1= within past year 2= longer than past year
Mammogram	Dichotomous	1= within past 2 years 2= longer than past 2 years

influenza vaccine within the past year; mammogram within the past 2 years; Pap tests within the past 3 years; and blood stool test within the past year or colonoscopy within the past 10 years. In prior reports mentioned, women were considered up-to-date with select preventive services if they had obtained all four screenings within recommended time frames. Women who had previously received a hysterectomy were considered up-to-date if they had received an influenza vaccine, mammogram, and blood stool test or colonoscopy within recommended time frames. Although information about screenings for flu, breast cancer, cervical cancer, and colorectal cancer was obtained in this current study, women were not asked whether they had previously received a hysterectomy, therefore the rates of receiving a Pap test within the past 2 years may not have accurately captured whether women were up-to-date with cervical cancer screening. As

such, rates for being up to date with cervical cancer screening may have been higher if data on hysterectomy had also been captured and accounted for in Pap tests utilization rates. Additionally, the current study only asked women about their use of blood stool tests and not their use of colonoscopies, which in turn did not accurately capture true rates of colorectal cancer screening utilization. For these reasons, utilization of Pap tests and blood stool tests/colonoscopies were omitted from this study as dependent variables and preventive service use was limited to use of influenza vaccines, mammograms, and WWVs within recommended time frames.

Intrapersonal and interpersonal factors were main independent variables examined in Aim 1 (Table IV). To explore intra/interpersonal barriers to preventive care (PC) use (zero barriers, any barriers), women were given a list of 20 potential barriers and asked: *Have you put off getting preventive care for any of the following reasons in the past 12 months?* For beliefs about frequency of obtaining certain PC services, women were asked, *How often do you think a woman should have a...* followed by a list of 7 specific PC services. Responses were dichotomized as “low consistency” (4 or fewer out of 7 consistent with recommendation guidelines) and “high consistency” (more than 4 out of 7 consistent with recommendation guidelines). For consultation given by provider on preventive services needed, women were given a list of 12 screenings/immunizations and asked, *In the past 12 months, has a doctor or nurse talked with you or asked you about the following?* Responses were dichotomized as counseled on 7 or more out of 12 and counseled on 6 or fewer services.

Social demographic characteristics assessed as potential confounders and effect modifier variables in Aim 1 (Table V) of surveyed women included: age (less than 50

years, 50 years and older); marital status at time of survey (married, not married); presence of children less than 18 years of age in the household (any children, zero children); education level (less than high school, high school graduate, some college, college graduate); income level (less than \$30,000, \$30,000 or more); and insurance status (any insurance, no insurance).

TABLE IV
AIM 1 MAIN INDEPENDENT VARIABLES

Intra/Interpersonal Factors	Variable Type	Scales of Measurement
Barriers to PC use	Dichotomous	0= zero barriers 1= any barriers
Beliefs about frequency of obtaining certain PC services	Dichotomous	0= low consistency (4 or fewer consistent out of 7) 1= high consistency (5+ consistent out of 7)
Knowledge of services based on provider consultation	Dichotomous	0= counseled on 6 or fewer (out of 12) 1= counseled on 7+ (out of 12)

Risk and protective factors assessed as potential confounders and effect modifier variables in Aim 1 (Table V) included: primary care provider (1 provider, more than 1 provider or no provider – *Do you have one person or place you think of as your personal health doctor or health care provider?*); perceived healthcare treatment based on race (treated worse than, same or better than other races, not sure – *Within the past 12 months, when seeking healthcare, do you feel you were treated worse than, the same as, or better than people of other races?*); impact of spiritual beliefs on preventive care

use (yes, no – *Do you feel that your spiritual beliefs impact your desire to seek preventive care?*); community impact on ability to get preventive care (yes, no – *Do you feel that your neighborhood impacts your ability to get preventive services?*); emotional support received when needed (always/usually, sometimes/rarely/never – *How often do you get the emotional support you need from family and friends?*); and quality of provider communication (strong positive provider communication, weak positive provider communication). Quality of provider communication was measured using the “How Well Providers (or Doctors) Communicate with Patients” 7-item scale.

Respondents were given 7 statements and asked how true each statement was for them during their last visit with a provider. For example, *The provider explained things in a way that was easy to understand*. ‘Yes, definitely true’ and ‘yes, somewhat true’ responses were scored 1 and ‘no, not at all true’ and ‘not sure’ responses were scored 0. Scores were summed and a score of 4 or greater was considered strong positive provider communication and a score of 3 or less was considered weak positive provider communication (Agency for Healthcare Research and Quality, 2012). Having one provider; strong positive provider communication; healthcare treatment the same or better than other races; and always or usually receiving emotional support when needed were considered protective factors. The dichotomized counterparts of these variables were considered risk factors. Neighborhood impact on ability to get preventive services was considered both a risk and protective factor.

4.5.1.2 Aim 1 Analysis

Data from a total of 124 women were available. The data were analyzed using SAS version 9.4 (SAS Institute, Cary, NC). Statistical significance was set at $p < 0.05$.

Frequencies and percentages were calculated for categorical variables. Four dependent variables were selected: (1) the proportion of women who had completed a well-woman visit in the previous 12 months; (2) the proportion of women who anticipated completing a well-woman visit in the next six to twelve months; (3) the proportion of women who had a flu vaccine in the previous 12 months; and, (4) the proportion of women who had a mammogram in the previous 2 years.

Logistic regression was used to estimate crude odds ratios for the association between each intra/interpersonal factor (barriers to, beliefs about, and knowledge of preventive care services use) and each dependent variable (past and anticipated WWV, flu vaccine, and mammogram use). Correlations and bivariate statistics were used to examine the associations between the independent variables and dependent variables and to identify potential confounders. Models for each independent intra/interpersonal factor and each dependent variable were then built, first with the factor alone (crude), then with potential confounders one at a time, which were retained if they produced a 10% change in the estimate. Breslow-Day tests were generated to determine if effect modification was present.

4.5.2 Aim 2 Risk and Protective Factors Associated with Psychological Well-Being

4.5.2.1 Aim 2 Methods

The main dependent variable in Aim 2 was overall PWB measured by SPWB (Table VI). The 7-item (42 items in total) SPWB was used to measure 6 dimensions of (autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, self acceptance) and overall levels of PWB. Overall PWB was

TABLE V
AIM 1 POTENTIAL CONFOUNDERS AND EFFECT MODIFIERS

Social Demographic Variables	Variable Type	Scale of Measurement
Age	Dichotomous	0= less than 50 1= 50+
Marital status	Dichotomous	0= not married 1= married
Education	Categorical	0= < high school 1= high school grad 2= some college 3= college grad
Income	Dichotomous	0= <\$30,000 1= \$30,000 or more
Children in household < 18	Dichotomous	0= zero children 1= any children
Insurance	Dichotomous	0= no insurance 1= any insurance
Risk & Protective Factors		
Primary care provider	Dichotomous	0= 1 provider 1= >1 or no provider
Provider communication	Dichotomous	0= weak positive comm. 1= strong positive comm.
Treated differently based on race	Dichotomous	0= no 1= yes
Others treated differently based on race		0= no 1= yes
Impact of spirituality on PC use	Dichotomous	0= no 1= yes
Community impact on PC use	Dichotomous	0= no 1= yes
Emotional support	Dichotomous	0= sometimes/Rarely/Never 1= always/Usually

TABLE VI
AIM 2 MAIN DEPENDENT VARIABLE

PWB	Variable Type	Scales of Measurement
Overall Composite Score	Dichotomous	0= low PWB 1= high PWB

dichotomized into high PWB (overall score in upper 50th percentile) and low PWB (overall score in lower 50th percentile). All 124 women answered all items for each dimension of the SPWB (123 women answered all autonomy scale questions).

Risk and protective factors were main independent variables (Table VII) examined in aim 2 and included: primary care provider (1 provider, more than 1 provider or no provider); quality of provider communication (strong positive provider communication, weak positive provider communication); emotional support received when needed (always/usually, sometimes/rarely/never); experiences of race-related emotional distress based on how respondent was treated (yes, no – *Within the past 30 days, have you felt emotionally upset, for example angry, sad, or frustrated, as a result of how YOU were treated based on your race?*); experiences of race-related emotional distress based on treatment of others (yes, no - *Within the past 30 days, have you felt emotionally upset, for example angry, sad, or frustrated, as a result of how OTHERS were treated based on their race?*); perceived community health (unhealthy, healthy – *How would you rate the neighborhood in which you live as a “Healthy Community?”*); belief that spiritual beliefs impacted well-being (yes, no – *Do you feel that your spiritual beliefs impact your sense of well-being?*); and menopause status (currently going through, not currently going through menopause – *Menopause is when a woman’s body*

naturally stops having menstrual cycles. Which of the following is true for you?). Having one provider; strong positive provider communication; always or usually receiving emotional support when needed; no experiences of race-related emotional distress; rating neighborhood as a healthy community; belief that spiritual beliefs impact well-being; and not currently going through menopause were considered protective factors. The dichotomized counterparts of these variables were considered risk factors.

TABLE VII
AIM 2 MAIN INDEPENDENT VARIABLES

Risk & Protective Factors		
Primary care provider	Dichotomous	0= 1 provider 1= >1 or no provider
Provider communication	Dichotomous	0= weak positive comm. 1= strong positive comm.
Race-related emotional stress based on treatment of self	Dichotomous	0= no 1= yes
Race-related emotional stress based on treatment of others	Dichotomous	0= no 1= yes
Perceived community health	Dichotomous	0= unhealthy 1= healthy
Impact of spirituality on WB	Dichotomous	0= no 1= yes
Emotional support	Dichotomous	0= sometimes/rarely/never 1= always/usually
Menopause	Dichotomous	0= not currently going through menopause 1= currently going through menopause

Social demographic characteristics were assessed as potential confounders and effect modifiers (Table V) and included: age (less than 50 years, 50 years and older); marital status at time of survey (married, not married); presence of children less than 18 years of age in the household (any children, zero children); education level (less than high school, high school graduate, some college, college graduate); income level (less than \$30,000, more than \$30,000); and insurance status (any insurance, no insurance).

4.5.2.2 Aim 2 Analysis

Psychological well-being scores were calculated for each PWB dimension and an overall composite score of PWB. Likert scale values were reverse coded for 20 items. Scores for all 7 items for each PWB dimension were summed, resulting in a composite score for each of the 6 PWB dimensions. Composite scores for each dimension were then summed to produce a composite score for overall PWB. Overall PWB was dichotomized into low PWB (below 50th percentile) and high PWB (above 50th percentile). Logistic regression was used to estimate crude odds ratios for the association between each risk and protective factor and overall PWB (high vs. low). Correlations and bivariate statistics were used to examine the associations between the independent and dependent variables and to identify potential confounders. Models for each independent risk and protective factor and overall PWB were built, first with the factor alone (crude), then with potential confounders one at a time, which were retained if they produced a 10% change in the estimate. Breslow-Day tests were conducted with each variable to determine if effect modification was present.

4.5.3 Aim 3 Associations between Psychological Well-Being and Use of Preventive Care

4.5.3.1 Aim 3 Methods

Past and anticipated well-woman visit use, past influenza vaccination and mammogram were main dependent variables in Aim 3 (Table III). All 124 women answered questions that assessed past and anticipated well-woman visit use, past influenza vaccine, and past mammogram as described in Aim 1.

Overall Psychological Well-Being was the main independent variable in Aim 3 (Table VI). All 124 women answered all items for each dimension of the SPWB (123 women answered all autonomy scale questions).

Social demographic and risk and protective factors were assessed as potential confounders and effect modifiers in Aim 3 (Table V) and included: primary care provider (1 provider, more than 1 provider or no provider); quality of provider communication (strong positive provider communication, weak positive provider communication); perceived healthcare treatment based on race (treated worse than, same or better than other races, not sure); impact of spiritual beliefs on preventive care use (yes, no); community impact on ability to get preventive care (yes, no); and emotional support received (always/usually, sometimes/rarely/never); race-related emotional distress based on how respondent was treated (yes, no); race-related emotional distress based on treatment of others (yes, no); perceived community health (unhealthy, healthy); and, impact of spiritual beliefs on well-being (yes, no).

Autonomous motivation was assessed as a potential mediator variable in Aim 3 (Table II). Autonomous motivation was tested as a mediator of the relationships

between PWB and past and anticipated WWV use, past influenza vaccine, and past mammogram. To measure autonomous motivation, the Treatment Self-Regulation Questionnaire (TSRQ) was included in the survey. Because this study was only examining the mediation role of autonomous motivation, only items on the autonomous motivation subscale were used in analysis. Scores for each item were summed and averaged, resulting in a possible score of 1 to 7.

4.5.3.2 Aim 3 Analysis

Logistic regression was used to estimate crude odds ratios for the association between overall PWB and past and anticipated WWV, past influenza vaccine, and past mammogram use. Correlations and bivariate statistics were used to examine the associations between the independent and dependent variables and to identify potential confounders and effect modifiers. Models for PWB were built, first with the factor alone (crude), then with potential confounders one at a time, which were retained if they produced a 10% change in the estimate. Breslow-Day tests were conducted with each variable to determine if effect modification was present.

Autonomous motivation was measured using the TSRQ by averaging scores for the autonomous motivation subscale. Exploratory mediation analysis was performed to understand whether autonomous motivation mediated the relationships between PWB (exposure) and past and anticipated WWV use, flu vaccine use, and mammogram use (outcomes). Mediation was assessed using a series of logistic regression analyses (Baron & Kenny, 1986). The main association of interest was the relationship between the exposure (dichotomized as high and low PWB) and the outcome variables (past and

anticipated WWV use, flu vaccine within the past year, and mammogram within the past 2 years; pathway “c”, Figure 3). The proposed mediator was autonomous motivation.

First, the association between PWB and each unique outcome was estimated. Next, the association between PWB and autonomous motivation was estimated, followed by the association between autonomous motivation and each unique outcome. Finally, a model for the association between PWB and each unique outcome was estimated, adjusting for autonomous motivation. In order to test whether autonomous motivation was acting as a mediator, this variable had to be associated with the exposure (pathway “a”, Figure 3); the mediator had to be associated with the outcome while adjusting for the exposure (pathway “b”, Figure 3); and, the effect estimate of the exposure had to be reduced when adjusting for the mediator. Autonomous motivation would only be considered a mediator if its entry into the model reduced the effect estimate of the exposure (overall PWB) in each fully adjusted model and met the other specified conditions.

4.6 Qualitative Methods

4.6.1 Data Collection Procedures

An interview guide was developed to guide the semi-structured interview discussions. The interview guide consisted of five sections. Section 1 consisted of questions that assessed how women defined, cultivated, and maintained a sense of well-being. Sections 2 and 3 gathered information on attitudes/beliefs, knowledge, and

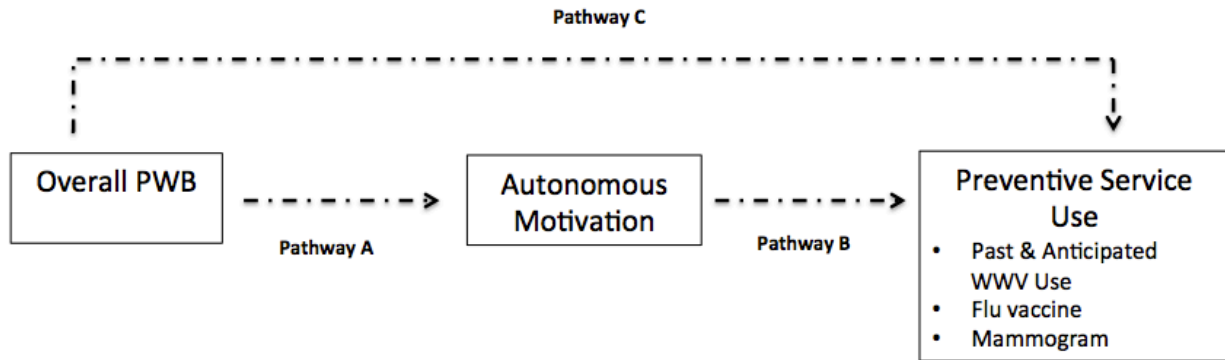


Figure 3. Proposed mediation analysis pathway for autonomous motivation.

facilitators/barriers to WWVs/preventive care. Section 4 gathered information on women's knowledge of preventive care service recommendations and associated health risks. Section 5 garnered women's beliefs regarding the intersection of PWB and use of preventive care.

Semi-structured interviews ranged from 28 to 81 minutes. Each participant received and signed an informed consent document and a study information sheet detailing the study purpose and potential risks prior to the start of the interview. The participant who was interviewed by phone emailed a signed informed consent document and also indicated her consent verbally prior to being interviewed. Interviews were recorded and recordings were professionally transcribed by GMR Transcription Services.

4.6.2 Qualitative Analysis

Qualitative data were analyzed with the intent of augmenting the quantitative data, as well as to elucidate new findings that might emerge. Four initial transcripts were

annotated and the annotations were compiled to develop a codebook, consisting of codes, code definitions, and the study construct that was related to each code (see Appendix C). Code families were used to group codes that were related to each overarching concept; the final codebook was developed iteratively and refined (codes were added or deleted and redundant codes merged) throughout the process of analysis. Transcripts were coded using Dedoose software, where one analyst (VH) coded all transcripts and a second analyst (JM) memoed a subset of six transcripts. Percent agreement was not used to determine intercoder reliability, however both analysts discussed memos and content of data prior to and during codebook development. Appropriateness and relevance of codes, code families, and code applications were extensively discussed amongst analysts prior to, during, and after coding. Export tools were used to analyze quotations linked to codes, co-occurrences, frequencies, and relationships among codes. Summaries of all quotes by code families were developed and themes were identified and refined by examining the frequency and patterns of codes. Specifically, themes were generated by examining codes and quotations that described categories, causes or explanations, relationships, and theoretical/conceptual constructs (Miles et al., 2013). Patterns of codes and code summaries were clustered into a final determination of themes, which addressed each study aim. Both analysts discussed transcripts, quotes, memos, and data summaries extensively to determine consensus and to assure that the themes truly represented the content of the data collected.

4.7 Mixed Methods Data Analysis Procedures

Quantitative and qualitative data were collected sequentially and analyzed concurrently. Both analyses focused on answering the specific aims of the study. Methodological integration was conducted in both instrument design and in interpretation of merged quantitative and qualitative results. Quantitative data for all study constructs were collected with validated or original survey questions. Qualitative data for all study constructs were collected with original interview questions. During qualitative analysis, each code family was labeled as to which study construct (e.g., preventive service use, PWB, intra/interpersonal factors, etc.) it addressed to help link quantitative and qualitative assessments of study constructs and specific aims (Appendix C).

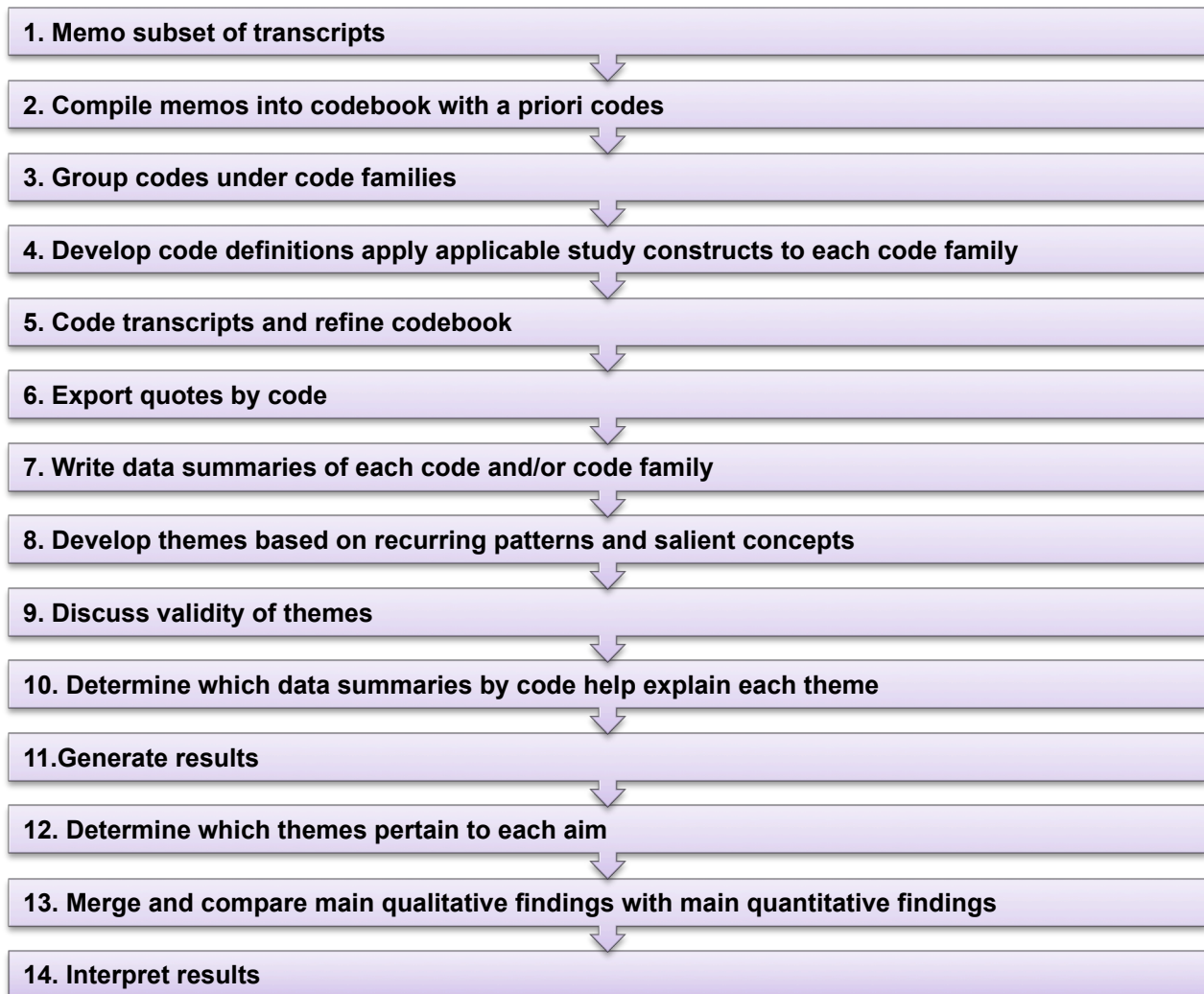


Figure 4. Summary of qualitative analysis process.

Eight main themes were identified in qualitative data. Results and themes from qualitative data were clustered by the specific aim that each theme addressed.

Qualitative data relating to themes 1, 2, and 3 were used to address aim 1. Qualitative data relating to themes 4, 5, and 6 were used to address aim 2, and qualitative data relating to themes 7 and 8 were used to address aim 3. Main findings of quantitative and qualitative results for each aim were visually juxtaposed to each other to aid in comparing and contrasting data to determine whether the two forms of data support convergence, expansion, or yielded contradictory results (Creswell & Clark, 2011).

Qualitative data were also used to explain the meaning of trends and relationships found in the quantitative results. The following diagram represents the study design and timeline.

Preplanning – Organizational relationship building & buy-in, IRB and grant submissions (Oct. 2015 – Feb 2016)

Timeline (Years 2016-2017)

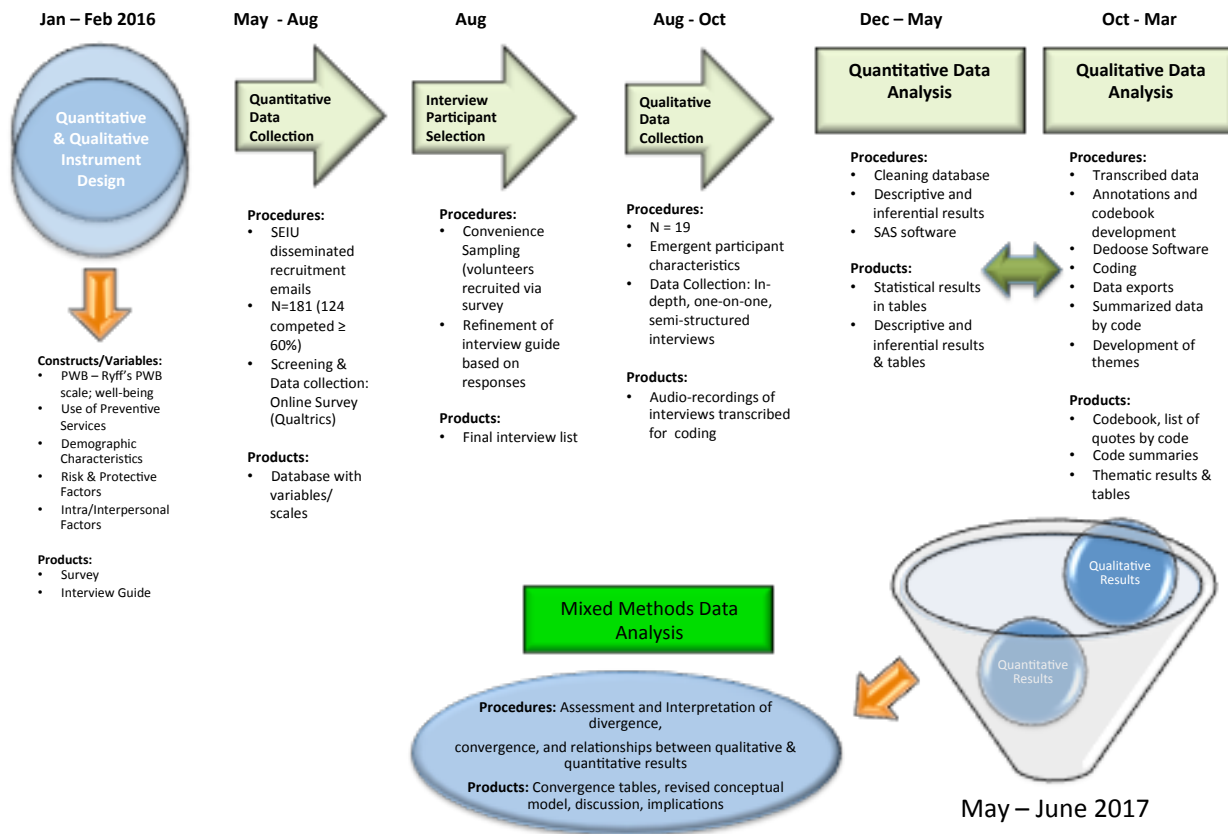


Figure 5. Study design and timeline.

5. RESULTS

5.1 Quantitative Results by Aim

5.1.1 Sample Characteristics

Descriptive analysis was performed to characterize the survey sample (Table VIII). One hundred twenty-four women completed at least 60% of the survey and comprised the study sample for analysis. Ages ranged from 40 to 63 with a mean age of 51 years. Most women were not married (75.8%). While education levels varied, the majority of women had some college education (54.8%), while 18.6% were college graduates, 22.6% were high school graduates, and 4% had less than a high school education. Most women had a household income less than \$30,000 (68.3%); 22.8% had household incomes that ranged from \$30,000 to \$49,999; and 8.9% had household incomes of \$50,000 or more. Fewer than half of the women (43.5%) resided with children in the household who were less than 18 years of age. The vast majority of women (94.4%) had some form of health insurance.

5.1.2 Aim 1 Intra/Interpersonal Factors Associated with Well-Woman Visit, Influenza Vaccine, and Mammogram Use

5.1.2.1 Aim 1 Past and Anticipated Well-Woman Visit Use

5.1.2.1.1 Aim 1 Social Demographic Characteristics

None of the associations between social demographic characteristics and past WWV use were statistically significant (Table VIII above). Most women had a well-woman visit within the past year (79.8%) and were slightly younger than those who had not had a WWV within the past year (mean ages 50.5 vs. 52.4). There was no

TABLE VIII
SOCIAL DEMOGRAPHIC FACTORS ASSOCIATED WITH WELL-WOMAN VISIT USE

	Overall	Past Well-Woman Visit Use		Anticipated Well-Woman Visit Use	
Characteristic, n (%)	(n=124)	Within the past year (n=99, 79.8%)	Longer than past year (n=25, 20.2%)	Within next 6 months to 1 year (n=106, 85.5%)	More than 1 year or don't know (n=18, 14.5%)
Age [mean, standard deviation (SD)]	50.9 (6.9) 40-63 (range)	50.5 (6.9)	52.4 (6.9)	50.5 (6.9)	53.4 (6.3)
Marital status					
Married	30 (24.2)	24 (80.0)	6 (20.0)	25 (83.3)	5 (16.7)
Not married	94 (75.8)	75 (79.8)	19 (20.2)	81 (86.2)	13 (13.8)
Education					
< High school	5 (4.0)	5 (100.0)	0	5 (100.0)	0
High school graduate	28 (22.6)	19 (67.9)	9 (32.1)	22 (78.6)	6 (21.4)
Some college	68 (54.8)	55 (80.9)	13 (19.1)	58 (85.3)	10 (14.7)
College graduate	23 (18.6)	20 (87.0)	3 (13.0)	21 (91.3)	2 (8.7)
Income^b					
< \$30,000	84 (68.3)	69 (82.1)	15 (17.9)	73 (86.9)	11 (13.1)
\$30,000-\$49,999	28 (22.8)	20 (71.4)	8 (28.6)	23 (82.1)	5 (17.9)
\$50,000+	11 (8.9)	9 (81.8)	2 (18.2)	9 (81.8)	2 (18.2)
Children in Household < 18 years					
No children	70 (56.5)	53 (75.7)	17 (24.3)	59 (84.3)	11 (15.7)
≥ 1 child	54 (43.5)	46 (85.2)	8 (14.8)	47 (87.0)	7 (13.0)
Insurance					
Insured	117 (94.4)	92 (78.6)	25 (21.4)	99 (84.6)	18 (15.4)
Uninsured (includes not sure)	7 (5.6)	7 (100.0)	0	7 (100.0)	0

^a Note: No associations between social demographic characteristics and past or anticipated WWV use significant at $p < 0.05$

^b n =123

difference in the prevalence of married and unmarried women who attended a WWV within the past year. High school graduates had the lowest frequency of WWV attendance within the past year (67.9%); college graduates and women who had some college education had similar rates of use, where the majority had obtained a WWV within the past year (87% and 80.9%, respectively). All women with less than a high school education (n=5) attended WWVs in the past year. Frequencies of past WWV use within the past year were similar among all income categories. Women who resided with at least one child who was less than 18 years old received a WWV within the past year at a slightly higher rate than those who did not (85.2% vs. 75.7%); however, the majority of women received a WWV in the past year, regardless of co-habitation with a child. Interestingly, all women who did not report having health insurance obtained a WWV within the past year (n=7), whereas 78.6% of insured women received a WWV in the past year.

None of the associations between social demographic characteristics and anticipated WWV use were statistically significant. The majority of women planned to obtain a WWV within the next 6 months to a year (85.5%). Women who anticipated obtaining a WWV over the next year were slightly younger (50.5 years of age) than those who planned to obtain a WWV longer than 1 year or who did not know (53.4 years of age). Over 80% of women, regardless of education level, marital status, income level, or co-habitation with a child less than 18 years of age, planned to receive a WWV within a year. All uninsured women (n=7) anticipated receiving a WWV within a year and 84.6% of insured women planned to do so.

5.1.2.1.2 Aim 1 Risk and Protective Factors

The association between provider communication and the timing of past WWV use was significantly associated with past WWV use (OR: 4.5, 95% CI: 1.04 – 19.73, $p < 0.05$) (Table IX). Ninety-three percent of women felt they had strong, positive communication with their providers, but of these women, 18.1% had not obtained a WWV within the past year. The association between belief that spiritual beliefs impacted women's desire to seek preventive care and the timing of past WWV use was also statistically significant (OR: 4.2, 95% CI: 1.17 – 14.98). Only 31.5% of women felt that their spiritual beliefs impacted their desire to seek preventive care. Of these women, the vast majority had received a WWV within the past year or planned to do so over the next year (92.3% and 89.7% respectively). Women who did not feel that their spiritual beliefs impacted their desire to seek preventive care obtained a WWV within the past year with less frequency than those who did (74.1%). No risk or protective factors were statistically associated with anticipated WWV use.

Among women who reported having only 1 primary care provider (PCP), 85.4% had obtained a WWV within the past year and 88.8% planned to obtain a WWV within a year. Although slightly fewer than those who had one PCP, the majority of women who had more than one provider also obtained and planned to attend an annual WWV (73.9% for past and anticipated) within a year. Only half of women who reported having no provider had obtained a WWV within the past year, although the majority of them planned to do so within a year (10 out of 12 women). The majority of women who had only 1 PCP saw their provider at a community or hospital clinic or group practice, where they saw the same person each time. Ninety-three percent of women felt they had

TABLE IX
RISK AND PROTECTIVE FACTORS ASSOCIATED WITH WELL-WOMAN VISIT USE

	Overall	Past Well-Woman Visit Use		Anticipated Well-Woman Visit Use	
Risk or Protective Factor, n (%)	(n=124)	Within the past year (n=99)	Longer than past year (n=25)	Within next 6 months-1 year (n=106)	More than 1 year or don't know (n=18)
Primary Care Provider					
1 provider	89 (71.8)	76 (85.4)	13 (14.6)	79 (88.8)	10 (11.2)
> 1 provider	23 (18.5)	17 (73.9)	6 (26.1)	17 (73.9)	6 (26.1)
None	12 (9.7)	6 (50.0)	6 (50.0)	10 (83.3)	2 (16.7)
Provider Communication^{a,b}					
Strong positive provider communication	105 (92.9)	86 (81.9)	19 (18.1)	90 (85.7)	15 (14.3)
Weak positive provider communication	8 (7.1)	4 (50.0)	4 (50.0)	7 (87.5)	1 (12.5)
Perceived Healthcare Treatment Based on Race^c					
Worse than other races	17 (14.0)	13 (76.5)	4 (23.5)	13 (76.5)	4 (23.5)
Same or better as other races	66 (54.6)	54 (81.8)	12 (18.2)	59 (89.4)	7 (10.6)
Don't know or not sure	38 (31.4)	29 (76.3)	9 (23.7)	31 (81.6)	7 (18.4)
Spiritual Beliefs Impact Desire to Seek PC^a					
Yes	39 (31.5)	36 (92.3)	3 (7.7)	35 (89.7)	4 (10.3)
No	85 (68.5)	63 (74.1)	22 (25.9)	71 (83.5)	14 (16.5)
Community Impacts Ability to Get PC^b					
Yes	24 (21.2)	19 (79.2)	5 (20.8)	20 (83.3)	4 (16.7)
No	89 (78.8)	71 (79.8)	18 (20.2)	77 (86.5)	12 (13.5)
Emotional Support^d					
Always/Usually	71 (60.7)	55 (77.5)	16 (22.5)	60 (84.5)	11 (15.6)
Sometimes/Rarely/Never	46 (39.3)	39 (84.8)	7 (15.2)	40 (87.0)	6 (13.0)

^a statistically significant at $p < 0.05$ for past WWV

^b n = 113

^c n = 121

^d n = 117

^e Note: If primary care provider response was missing, it was assumed to be "none."

^f Note: Completion rates tapered toward the end of the survey.

strong, positive communication with their providers, but of these women, 18.1% had not obtained a WWV within the past year. Treatment based on race did not seem to impact women's use of WWVs. Proportions of past and anticipated use were similar regardless if women felt they were treated worse than, better or the same, or were not sure about their healthcare treatment based on their race. Only 21.2% of women believed that their community impacted their ability to get preventive care, but proportions of past and anticipated WWV use were similar among women regardless of their beliefs about community impact on obtaining care. Thirty-nine percent of women reported sometimes, rarely, or never receiving emotional support when needed; however, a larger proportion of these women obtained past and anticipated WWVs than those who always or usually had emotional support.

5.1.2.1.3 Aim 1 Intra/Interpersonal Factors

Barriers to preventive care use were significantly associated with the timing of anticipated WWV use (OR: 0.24, 95% CI: 0.08 – 0.72), but was not statistically associated with the timing of past WWV use (Table X). The majority of women (83.1%) did not report any barriers to utilizing preventive care services and had obtained and planned to obtain an annual WWV. Of the 21 women who reported barriers to care, none of them had received a WWV within the past year and 7 of them did not anticipate obtaining a WWV within a year. The most commonly cited barriers to putting off preventive care were women forgetting and wait times at providers' offices. Other barriers were costs associated with care, lack of health insurance, time associated with getting care or appointments, confusion over which services to get, conflicting demands

(work, childcare, too busy), lack of transportation, or not having a regular doctor (data not shown).

The relationship between women's beliefs about the frequency of obtaining each of 7 preventive services and the timing of past WWV use was statistically significant (OR: 2.6, 95% CI: 1.04 – 6.50), but the relationship between beliefs about the frequency of services and the timing of anticipated WWV use was not statistically significant. Although no woman's beliefs about timing were consistent with all 7 recommendation guideline timeframes, 72.6% of women reported timeframes consistent with the recommendation timeframes for 5 or 6 services. These women were more likely to have received a WWV within the past year than those women whose reports of timeframes were less consistent with recommendation timeframes (84.4% vs. 67.7%), although rates for anticipated visits were similar. Among women whose beliefs about timeframes, were less consistent, 32% had not received a WWV within the past year. Knowledge of services as a result of provider consultation was not associated with the timing of past WWV use or anticipated WWV use. Fifty-nine percent of women received provider counseling on 7 or more (out of 12) preventive services and these women were slightly more likely to have obtained a past or anticipated WWV.

Among women who had been counseled on 6 or fewer services, 27.5% had not received a WWV within the past year. A large majority of women reported that getting information from a doctor or nurse (86%) or a health insurance company (71%) would help them decide to get preventive care (data not shown). A majority of women also felt that getting information from health pamphlets, friends or family, health websites, local

health departments, and health magazines or books would help them decide to get preventive care (data not shown).

The only intra/interpersonal factor (independent variable) that was significantly associated with past WWV use was beliefs regarding frequency of obtaining preventive care services (Table XI), therefore this variable was included in multivariable modeling. The final logistic regression model for the association between beliefs about frequency

TABLE X
INTRA/INTERPERSONAL FACTORS ASSOCIATED WITH WELL-WOMAN VISIT USE

Intra/Interpersonal Factors, n (%)	Overall (n=124)	Past Well-Woman Visit Use N (%)		Anticipated Well-Woman Visit Use N (%)	
		Within past year (n=99)	Longer than 1 year (n=25)	Within 6 months – 1 year (n=25)	Longer than 1 year or DK (n=25)
Barriers to PC Use^b					
Any barriers	21 (16.9)	0 (0.00)	21 (100.0)	14 (66.7)	7 (33.3)
Zero barriers	103 (83.1)	99 (96.1)	4 (3.9)	92 (89.3)	11 (10.7)
Beliefs about frequency of obtaining certain PC services^a					
Low consistency with recommendations (≤ 4)	34 (27.4)	23 (67.7)	11 (32.3)	28 (82.4)	6 (17.7)
High consistency with recommendations (5-6 consistent out of 7)	90 (72.6)	76 (84.4)	14 (15.6)	78 (86.7)	12 (13.3)
Knowledge of services based on health care provider consultation					
Counseled on 6 or fewer services	51 (41.1)	37 (72.6)	14 (27.5)	43 (84.3)	8 (15.7)
Counseled on 7+ services	73 (58.9)	62 (84.9)	11 (15.1)	63 (86.3)	10 (13.7)

^a statistically significant at $p < 0.05$ for past WWV

^b statistically significant at $p < 0.05$ for anticipated WWV

of PC services and the proportion of women who had completed a well-woman visit in the previous 12 months was adjusted for knowledge of services based on provider consultation and quality of provider communication. Breslow-Day tests were generated to determine if effect modification was present. The Breslow-Day p-values for each social demographic characteristic and past WWV use and for each risk and protective factor and past WWV use did not meet the $p < 0.05$ criteria in the single-factor stratified analysis, therefore no interaction terms were entered into the final model. Compared to women whose beliefs were low with respect to consistency with recommendations, women whose beliefs were highly consistent with recommendation timeframes had 3.0 times higher odds of having obtained a WWV within the past year (OR: 3.0, 95% CI, 1.1 - 8.5).

TABLE XI
CRUDE AND ADJUSTED ODDS RATIOS FOR RELATIONSHIP BETWEEN BELIEFS ABOUT FREQUENCY OF OBTAINING PREVENTIVE CARE SERVICES AND PAST WELL-WOMAN VISIT USE

Intra/Interpersonal Factors	Crude Odds Ratio for WWV Use Within the Past Year (95% CI)		Adjusted Odds Ratio (95% CI)	
Beliefs about frequency of obtaining certain PC services				
Low consistency	1.0	(ref)		
High consistency	2.6	(1.0, 6.5)	3.0	(1.1, 8.5)

^a Note: WWV= well-woman visit, PC= preventive care

^b Note: The final model for beliefs about frequency of obtaining PC services and past WWV use was adjusted for knowledge of services based on provider communication and quality of provider communication.

The only intra/interpersonal factor (independent variable) that was statistically associated with anticipated WWV was ‘any barriers’; as such, this variable was included in multivariable modeling (Table XXII). The final logistic regression model for the association between ‘any barriers’ and the proportion of women who had anticipated obtaining a WWV within the next 12 months was adjusted for knowledge of services based on provider consultation, emotional support, and consistency of beliefs with recommendation timeframes. Breslow-Day tests were generated to determine if effect modification was present. The Breslow-Day p-values for each social demographic characteristic and anticipated WWV and for each risk and protective factor and anticipated WWV did not meet the $p < 0.05$ criteria in the single-factor stratified analysis, therefore no interaction terms were entered into the model. Compared to women who reported no barriers, women who reported having any barriers had 0.3 times lower odds of anticipated WWV use within the next year (OR: 0.3, 95% CI: 0.09 - 0.96).

TABLE XII
CRUDE & ADJUSTED ODDS RATIOS FOR RELATIONSHIP BETWEEN BARRIERS
AND ANTICIPATED WELL-WOMAN VISIT USE

Intra/Interpersonal Factors	Crude Odds Ratio for Anticipated WWV Use Within One Year (95% CI)		Adjusted Odds Ratio (95% CI)	
Barriers to PC Use				
Zero barriers	1.0	(ref)		
Any barriers	0.2	(0.08, 0.7)	0.3	(0.09, 0.96)

^a Note: abbreviation WWV= well-woman visit, PC= preventive care

^b Note: The final model for barriers to PC use and anticipated WWV use adjusts for knowledge of services based on provider consultation, emotional support, and consistency of beliefs with recommendation timeframes.

5.1.2.2 Aim 1 Influenza Vaccination and Mammograms

5.1.2.2.1 Aim 1 Social Demographic Characteristics

None of the associations between social demographic characteristics and flu vaccine use were statistically significant (Table XIII). Fewer than half of women (48.4%) had a flu vaccine within the past year. Frequencies of obtaining a flu vaccine within the past year were similar across marital status and income. Approximately half of women who were college graduates, had some college education, and were insured received flu vaccines within the past year, whereas 67.9% of high school graduates and 5 out of 7 uninsured women *had not* obtained an annual flu vaccine. Women who were residing with children 18 years or less were more likely to have obtained a flu shot within the past year than women who were not (53.7% vs. 44.3%).

None of the associations between social demographic characteristics and mammogram use were statistically significant (Table XIII). Seventy-nine percent of women had obtained a mammogram within the past 2 years. Women who had not obtained a mammogram within the past 2 years were slightly younger than those who had (48.4 vs. 51.6 years of age). Among married women, 30% had not obtained a mammogram, whereas 18.1% of unmarried women had not obtained a mammogram. Almost 40% of women whose highest education level was high school graduate had *not* obtained a mammogram and these women were the least likely to have obtained a mammogram versus all other education levels. Women who had a household income of \$50,000 or more were the most likely to have obtained a mammogram within the past 2 years. Seventy-nine percent of insured women and 6 out of 7 uninsured women had received a mammogram within the past 2 years.

TABLE XIII
SOCIAL DEMOGRAPHIC FACTORS ASSOCIATED WITH INFLUENZA VACCINE
AND MAMMOGRAM USE

	Overall	Obtained Influenza Vaccine within past year		Obtained Mammogram within past 2 years	
Characteristic, n (%)	(n=124)	YES (n=60, 48.4%)	NO (n=64, 51.6%)	YES (n=98, 79.0%)	NO (n=26, 21.0%)
Age [mean, standard deviation (SD)]	50.9 (6.9) 40-63 (range)	51.9 (7.5)	50.0 (6.3)	51.6 (6.9)	48.4 (6.6)
Marital status					
Married	30 (24.2)	14 (46.7)	16 (53.3)	21 (70.0)	9 (30.0)
Not married	94 (75.8)	46 (48.9)	48 (51.1)	77 (81.9)	17 (18.1)
Education					
< High school	5 (4.0)	5 (100.0)	0 (0.0)	5 (100.0)	0 (0.0)
High school graduate	28 (22.6)	9 (32.1)	19 (67.9)	17 (60.7)	11 (39.3)
Some college	68 (54.8)	35 (51.5)	33 (48.5)	57 (83.8)	11 (16.2)
College graduate	23 (18.6)	11 (47.8)	12 (52.2)	19 (82.6)	4 (17.4)
Income^a					
< \$30,000	84 (68.3)	41 (48.8)	43 (51.2)	67 (79.8)	17 (20.2)
\$30,000-\$49,999	28 (22.8)	14 (50.0)	14 (50.0)	20 (71.4)	8 (28.6)
\$50,000+	11 (8.9)	5 (45.5)	6 (54.6)	10 (90.9)	1 (9.1)
Children in Household < 18 years					
No children	70 (56.5)	31 (44.3)	39 (55.7)	57 (81.4)	13 (18.6)
≥ 1 child	54 (43.5)	29 (53.7)	25 (46.3)	41 (75.9)	13 (24.1)
Insurance					
Insured	117 (94.4)	58 (49.6)	59 (50.4)	92 (78.6)	25 (21.4)
Uninsured (includes not sure)	7 (5.6)	2 (28.6)	5 (71.4)	6 (85.7)	1 (14.3)

^a n = 123

^b Note: No associations between social demographic characteristics and flu or mammogram significant at p < 0.05

5.1.2.2.2 Aim 1 Risk and Protective Factors

None of the associations between risk or protective factors and flu vaccine use were statistically significant (Table XIV). A higher proportion of women with more than 1 PCP received a flu vaccine within the past year than women with 1 PCP or had no PCP. Although 93% of women had strong positive communication with providers, fewer than 50% of them obtained a flu vaccine. Rates of obtaining a flu vaccine within the past year were similar among women regardless of degree of emotional support, treatment based on race, and belief about community impact on use of preventive care. Among women who believed their spirituality impacted their use of preventive care, 59% had obtained a flu vaccine, as opposed to 43.5% of women who did not believe their spirituality impacted their use of preventive care. None of the associations between risk or protective factors and mammogram use were statistically significant. Seventy-two percent of women had only 1 PCP and among them, 78.7% had obtained a mammogram within the past 2 years. Twenty out of 23 women with more than 1 PCP and 8 out of 12 women with no PCP had obtained a mammogram. Rates of mammography utilization were similar among women regardless of quality of provider communication, community impact on ability to obtain preventive care, and emotional support. Among women who were treated the same or better than other races when getting healthcare, 84.9% obtained a mammogram, whereas 76.5% of women treated worse than other races obtained a mammogram. Women who believed their spirituality impacted their desire to seek preventive were slightly more likely to obtain a mammogram than those who did not.

TABLE XIV
RISK AND PROTECTIVE FACTORS ASSOCIATED WITH INFLUENZA VACCINE AND
MAMMOGRAM USE

	Overall	Obtained Influenza Vaccine within past year		Obtained Mammogram within past 2 years	
Risk or Protective Factor, n (%)	(n=124)	YES (n=60, 48.4%)	NO (n=64, 51.6%)	YES (n=98, 79.0%)	NO (n=26, 21.0%)
Primary Care Provider^b					
1 provider	89 (71.8)	41 (46.1)	48 (53.4)	70 (78.7)	19 (21.4)
> 1 provider	23 (18.5)	14 (60.9)	9 (39.1)	20 (87.0)	3 (13.0)
None	12 (9.7)	5 (41.2)	7 (58.3)	8 (66.7)	4 (33.3)
Provider Communication					
Strong positive provider communication	105 (92.9)	51 (48.6)	54 (51.4)	83 (79.0)	22 (21.0)
Weak positive provider communication	8 (7.1)	3 (37.5)	5 (62.5)	6 (75.0)	2 (25.0)
Perceived Healthcare Treatment Based on Race^c					
Worse than other races	17 (14.0)	10 (58.8)	7 (41.2)	13 (76.5)	4 (23.5)
Same or better as other races	66 (54.6)	36 (54.6)	30 (45.5)	56 (84.9)	10 (15.1)
Don't know or not sure	38 (31.4)	13 (34.2)	25 (65.8)	26 (68.4)	12 (31.6)
Spiritual Beliefs Impact Desire to Seek PC					
Yes	39 (31.5)	23 (59.0)	16 (41.0)	34 (87.2)	5 (12.8)
No	85 (68.5)	37 (43.5)	48 (56.5)	64 (75.3)	21 (24.7)
Community Impacts Ability to Get PC^b					
Yes	24 (21.2)	13 (54.2)	11 (45.8)	20 (83.3)	4 (16.7)
No	89 (78.8)	41 (46.1)	48 (53.4)	69 (77.5)	20 (22.5)
Emotional Support^d					
Always/Usually	71 (60.7)	35 (49.3)	36 (50.7)	55 (77.5)	16 (22.5)
Sometimes/Rarely/Never	46 (39.3)	21 (45.7)	25 (54.4)	36 (78.3)	10 (21.7)

^a Note: No risk or protective factors were significantly associated with flu or mammogram use at $p < 0.05$

^b n = 113

^c n = 121

^d n = 117

^e Note: PC= preventive care

^f Note: If primary care provider response was missing, it was assumed to be "none."

5.1.2.2.3 Aim 1 Intra/Interpersonal Factors

The relationship between Beliefs about the frequency of obtaining each of 7 preventive services and flu vaccine use was statistically significant (OR: 4.4, 95% CI: 1.8 – 10.9) (Table XV). Women who had higher consistency with recommendation timeframes (57.8% vs. 23.5%) were statistically significantly more likely to have obtained a flu vaccine within the past year. Although not statistically significant, women with higher knowledge of services based on provider consultation (56.2% vs. 37.3%) and women with no barriers were also more likely to have obtained a flu vaccine within the past year; moreover, women with no barriers were more likely to have obtained a flu vaccine than women who reported barriers to preventive care use (52.5% vs. 28.6%).

Barriers to preventive care use (OR: 0.34, 95% CI: 0.13 – 0.95) and beliefs about the frequency of obtaining preventive services (OR: 3.7, 95% CI: 1.5 – 9.1) were significantly associated with mammogram use. Among women with zero barriers to preventive care use, 82.5% obtained a mammogram, whereas 38.1% of women who reported barriers *had not* obtained a mammogram. Eighty-six percent of women whose beliefs were highly consistent with recommendation timeframes obtained a mammogram, whereas only 61.8% of women with low consistency with recommendation timeframes obtained a mammogram. Knowledge of services based on provider consultation was not significantly associated with mammogram use.

The only intra/interpersonal factor (independent variable) that was significantly associated with past flu vaccine use was beliefs about frequency of obtaining preventive care services; as such, a multivariable model was developed to examine the association between beliefs regarding recommendation timeframes and flu vaccine use (Table XVI).

TABLE XV
INTRA/INTERPERSONAL FACTORS ASSOCIATED WITH INFLUENZA VACCINE
AND MAMMOGRAM USE

Intra/Interpersonal Factors, n (%)	Overall (n=124)	Obtained Influenza vaccine within past year (n, %)		Obtained Mammogram within past 2 years (n, %)	
		YES (n=60, 48.4%)	NO (n=64, 51.6%)	YES (n=98, 79.0%)	NO (n=26, 21.0%)
Barriers to PC Use^b					
Any barriers	21 (16.9)	6 (28.6)	15 (71.4)	13 (61.9)	8 (38.1)
Zero barriers	103 (83.1)	54 (52.4)	49 (47.6)	85 (82.5)	18 (17.5)
Beliefs about frequency of obtaining certain PC services^{a, b}					
Low consistency with recommendations (4 or fewer)	34 (27.4)	8 (23.5)	26 (76.5)	21 (61.8)	13 (38.2)
High consistency with recommendations (5+)	90 (72.6)	52 (57.8)	38 (42.2)	77 (85.6)	13 (14.4)
Knowledge of services based on health care provider consultation					
Counseled on 6 or fewer services	51 (41.1)	19 (37.3)	32 (62.8)	41 (80.4)	10 (19.6)
Counseled on 7+ services	73 (58.9)	41 (56.2)	32 (43.8)	57 (78.1)	16 (21.9)

^a statistically significant at $p < 0.05$ for flu vaccine use

^b statistically significant at $p < 0.05$ for mammogram use

^c Note: PC= preventive care

The final logistic regression model for this association was adjusted for knowledge of services based on provider consultation and barriers to preventive care use. Breslow-Day tests were generated to determine if effect modification was present. The Breslow-Day p-values for each social demographic characteristic and anticipated WWV and for each risk and protective factor and flu vaccine use did not meet the $p < 0.05$ criteria in the single-factor stratified analysis, therefore no interaction terms were entered into the model. Compared to women whose beliefs were low with respect to consistency with recommendations, women whose beliefs about recommendation timeframes were highly consistent with recommendation guidelines had 3.9 times higher odds of having obtained a flu vaccine within the past year (OR: 3.9, 95% CI, 1.5 - 9.7).

TABLE XVI
CRUDE AND ADJUSTED ODDS RATIOS FOR RELATIONSHIP BETWEEN BELIEFS
ABOUT FREQUENCY OF OBTAINING PREVENTIVE CARE SERVICES AND
INFLUENZA VACCINE USE

Intra/Interpersonal Factors	Crude Odds Ratio Obtained Flu vaccine within past year (95% CI)		Adjusted Odds Ratio (95% CI)	
Beliefs about frequency of obtaining certain PC services				
Low consistency	1.0	(ref)		
High consistency	4.4	(1.8, 10.9)	3.9	(1.5, 9.7)

^a Note: The final model for past WWV use adjusts for knowledge of services based on provider consultation and barriers to preventive care use.

Crude associations of barriers to preventive care use and beliefs about frequency of obtaining preventive care services were significantly associated with mammogram use; as such, these variables were included in multivariable modeling. Barriers to preventive care use was adjusted for healthcare treatment based on race, but when this adjustment was made, barriers to preventive care use was no longer significantly associated with mammogram use.

A final logistic regression model for the association between beliefs of frequency of obtaining services and mammogram use was adjusted for knowledge of services based on provider consultation, barriers to preventive care use, and healthcare treatment based on race (Table XVII). Results from single-factor stratified contingency tables and Breslow-Day tests showed potential effect modification for interactions between education and consistency with recommendation guidelines as well as provider communication and consistency with recommendation guidelines. However, when these interaction terms were entered into a logistic model, they were not significant, indicating no effect modification of any social demographic characteristics or risk and protective factors. Compared to women whose beliefs were low in consistency with recommendations, women whose beliefs about recommendation timeframes were highly consistent with recommendation guidelines had 4.4 times higher odds of having obtained a mammogram within the past 2 years (OR: 4.4, 95% CI, 1.6 – 12.2).

TABLE XVII
CRUDE AND ADJUSTED ODDS RATIOS FOR RELATIONSHIP BETWEEN BELIEFS
ABOUT FREQUENCY OF OBTAINING PREVENTIVE CARE SERVICES AND
MAMMOGRAM USE

Intra/Interpersonal Factors	Crude Odds Ratio Obtained Mammogram within past 2 years (95% CI)		Adjusted Odds Ratio (95% CI)	
Beliefs about frequencies of obtaining certain PC services				
Low consistency	1.0	(ref)		
High consistency	3.7	(1.5, 9.1)	4.4	(1.6, 12.2)

^a Note: The final model for anticipated WWV use adjusts for knowledge of services based on provider consultation, barriers to preventive care use, and healthcare treatment based on race.

5.1.3 Aim 2 Risk and Protective Factors Associated with Psychological Well-Being

The objective of this aim was to explore the relationship between risk and protective factors (independent variables) adjusted for social demographic characteristics factors) and PWB (dependent variable) in midlife AAW. The possible range for each dimension of PWB was 7 to 42 and the possible range for the overall composite score for PWB was 42 to 252 (Table XVIII). Women whose overall mean PWB scores were in the upper 50th percentile were considered to have high PWB (≥ 211.5) and women whose scores were in the lower 50th percentile (< 211.5) were considered to have low PWB. The overall composite mean score was 206.8 and ranged from 130 to 245. The overall mean score was highest for the personal growth dimension (36.2). Overall mean scores were also high for positive relations with others (35.6), purpose in life (35.5), and autonomy (35.3). Women scored lower on levels of self-

acceptance (33.1) and lowest with respect to environmental mastery (31); ranges were also widest for these two dimensions.

TABLE XVIII
OVERALL MEAN SCORES FOR SIX DIMENSIONS AND COMPOSITE
PSYCHOLOGICAL WELL-BEING

Dimension of PWB	Overall Mean Score (SD)	Range
Autonomy ^a	35.3 (5.2)	18-42
Environmental Mastery	31 (4.9)	17-39
Personal Growth	36.2 (4.8)	23-42
Positive Relations with Others	35.6 (5.8)	21-42
Purpose in Life	35.5 (5.7)	18-42
Self-Acceptance	33.1 (6.8)	12-42
Composite Score	206.8 (26.5)	130-245

^a one missing value imputed as 3.5 for autonomy

^b Note: Possible ranges: dimensions (7-42); composite (42-252)

^c Note: SD=standard deviation

5.1.3.1 Aim 2 Social Demographic Characteristics

The relationships between social demographic characteristics and PWB were not statistically significant at $p < 0.05$ (Table XIX). Overall mean composite scores for PWB were similar among women whose ages ranged from 40 to 49 and 50 to 63 and for married and unmarried women. Women who were college graduates and had some college had higher overall PWB scores than high school graduates and women with less than a high school education; women with less than a high school education had

the lowest PWB scores. Women with household incomes less than \$30,000 had the lowest mean and median PWB scores compared to women of other income categories. Insured women had higher mean and median scores of overall PWB than uninsured women; and, women who did not reside with children 18 years or less had higher mean and median scores of overall PWB than those who did reside with children 18 years or younger.

5.1.3.2 Aim 2 Risk and Protective Factors

The only risk or protective factor that was significantly associated with PWB was emotional support (OR: 5.5, 95% CI: 2.4 – 12.6). Women who always or usually received emotional support from family and friends when needed were significantly more likely to have high PWB, whereas women who sometimes, rarely, or never received emotional support when needed were significantly more likely to have low PWB (Table XX). Women with only 1 PCP or more than 1 or no PCP had similar rates of high and low PWB. Likewise, women with strong provider communication also had similar rates of high and low PWB; however, 5 out of the 8 women with weak provider communication had high PWB. Most women reported they had not experienced race-related emotional distress based on treatment of themselves or others. Forty-seven percent of women felt that their spirituality impacted their sense of well-being and 54.9% rated their neighborhood as a very healthy, healthy, or somewhat healthy community. Sixty-one percent of women always or usually received emotional support needed from family and friends and 42.5% of women were currently experiencing symptoms associated with menopause.

TABLE XIX
**SOCIAL DEMOGRAPHIC FACTORS ASSOCIATED WITH PSYCHOLOGICAL WELL-
 BEING**

Characteristic	n	Overall PWB			
		Range	Mean Score (SD)	Median Score	Interquartile Range (Q1-Q3)
Overall	124	130-245	206.8 (26.5)	211.5	188.5-227.5
Age					
40-49	58	145-242	207.2 (24.4)	212	193-224
50-63	66	130-245	206.4 (28.4)	211.5	186-232
Marital status					
Married	30	145-245	209 (26.1)	209	198-231
Not married	94	130-242	206.1 (26.7)	215	188-227
Education					
< High school	5	153-241	187.6 (34.4)	190	162-192
High school graduate	28	130-239	201.4 (27.9)	203.5	186.25-223.0
Some college	68	145-245	209.4 (26.2)	215.5	190.0-231.5
College graduate	23	149-241	209.7 (22.7)	220	199-225
Income^a					
< \$30,000	84	130-241	204.1 (27.4)	207.5	187.25-227.0
\$30,000-\$49,999	28	174-245	213.6 (20.3)	216.5	199.0-229.0
\$50,000+	11	145-242	206.7 (30.9)	217	185-239
Children in Household < 18 years					
No children	70	147-242	209.5 (24.5)	216.5	191.0-228.0
≥ 1 child	54	130-245	203.3 (28.7)	204	186-227
Insurance					
Insured	117	130-245	207.1 (26.6)	212	191-228
Uninsured/Not sure	7	169-239	200.7 (25.4)	190	183-222

^a n = 123

^b Note: No associations between social demographic characteristics and PWB were statistically significant at p < 0.05

^c Note: SD=standard deviation

TABLE XX
RISK AND PROTECTIVE FACTORS ASSOCIATED WITH
OVERALL PSYCHOLOGICAL WELL-BEING

Risk and Protective Factor	n (%)	Overall Mean Score PWB (SD)	PWB n (%)	
			High	Low
Primary Care Provider				
> 1 provider & none	35 (28.2)	205.0 (29.4)	18 (51.4)	17 (48.6)
1 provider	89 (71.8)	207.5 (25.4)	44 (49.4)	45 (50.6)
Positive Provider Communication^b				
Strong	105 (92.9)	207.0 (25.9)	52 (49.5)	53 (50.5)
Weak	8 (7.1)	211.4 (31.6)	5 (62.5)	3 (37.5)
Race-Related Emotional Distress (based on treatment of Self)^c				
Yes	15 (13.6)	209.1 (25.3)	8 (53.3)	7 (46.7)
No/Not sure	95 (86.4)	207.3 (26.7)	50 (52.6)	45 (47.4)
Race-Related Emotional Distress (based on treatment of others)^c				
Yes	38 (34.5)	210.7 (24.6)	23 (60.5)	15 (39.5)
No/Not sure	72 (65.5)	207.1 (26.8)	36 (50.0)	36 (50.0)
Perceived Impact of Spirituality on Well-Being				
Yes	58 (46.8)	204.1 (27.9)	25 (43.1)	33 (56.9)
No/Don't Know	66 (53.2)	209.1 (25.1)	37 (56.1)	29 (43.9)
Perceived Community Health				
Healthy	62 (54.9)	207.8 (27.9)	33 (53.2)	29 (46.8)
Unhealthy	41 (36.3)	208.7 (25.3)	20 (47.8)	21 (51.2)
Don't know	10 (8.8)	199.3 (18.7)	4 (40.0)	6 (60.0)
Emotional Support^{a, d}				
Always/Usually	71 (60.7)	215.0 (22.2)	47 (66.2)	24 (33.8)
Sometimes/Rarely/ Never	46 (39.3)	195.1 (27.1)	12 (26.1)	34 (73.9)
Menopause^c				
Currently experiencing symptoms	48 (42.5)	209.6 (25.3)	26 (54.2)	22 (45.8)
Not currently experiencing symptoms	65 (57.5)	205.7 (27.0)	31 (47.7)	34 (52.3)

^a statistically significant at $p < 0.05$ for PWB

^b n = 113

^c n = 110

^d n = 117

^e Note: Completion rates tapered toward end of survey

^f Note: If primary care provider response was missing, it was assumed to be "none."

As described above, the only risk or protective factor that was significantly associated with PWB was emotional support, as such, this variable was entered into multivariable modeling (Table XXI). The final logistic regression model for the association between emotional support and PWB was adjusted for education. Although in stratified analysis, there was indication of effect modification between emotional support and marital status, education, and children younger than age 18 in the household, none of these three interaction terms were found to be significant in the multivariable modeling. Based on the final model, women who always or usually received emotional support when needed had 5.4 times higher odds of having high PWB than those who sometimes, rarely, or never received emotional support when needed (OR: 5.4, 95% CI, 2.4-12.4).

TABLE XXI
CRUDE AND ASSOCIATED ODDS RATIOS FOR RELATIONSHIP BETWEEN
EMOTIONAL SUPPORT AND PWB

Risk/Protective Factor	Crude Odds Ratio for PWB (95% CI)		Adjusted Odds Ratio for PWB (95% CI)	
Emotional Support				
Always /Usually	5.5	(2.4, 12.6)		
Sometimes/ Rarely/ Never	1.0	(ref)	5.4	(2.4, 12.4)

^a Note: PWB=Psychological Well-Being

^b Note: The final model for emotional support and PWB use adjusts for education.

5.1.4 Aim 3 Associations between Psychological Well-Being and Preventive Care Use

5.1.4.1 Aim 3 Psychological Well-Being and Well-Woman Visit Use

Rates of past WWV use were similar among women with high and low PWB (80.7%, 79.0%) (Table XXII). Among women with high PWB, 90.3% anticipated obtaining a WWV within the next year and 80.7% of women with low PWB anticipated obtaining a WWV within the next year. The relationship between PWB and past WWV use and the relationship between PWB and anticipated WWV use were not statistically significant.

No potential confounders were detected in the association between PWB and the proportion of women who had obtained a WWV within the past year, therefore no adjustments were made to this model. Breslow-Day tests were generated to determine if effect modification was present. The Breslow-Day p-values for each social demographic characteristic and past WWV use, and for each risk and protective factor and past WWV use did not meet the $p < 0.05$ criteria in the single-factor stratified analysis, therefore no interaction terms were entered into the model (data not shown).

The final logistic regression model for the association between PWB and the proportion of women who had anticipated obtaining a WWV within the next year was adjusted for age, menopause, and primary care provider (Table XXIII). Breslow-Day tests were generated to determine if effect modification was present. The Breslow-Day p-values for each social demographic characteristic and anticipated WWV and for each risk and protective factor and anticipated WWV did not meet the $p < 0.05$ criteria in the

single-factor stratified analysis, therefore no interaction terms were entered into the model.

TABLE XXII
RELATIONSHIP BETWEEN PSYCHOLOGICAL WELL-BEING AND
WELL-WOMAN VISIT USE

PWB, n (%)	Overall (n=124)	Past Well-Woman Visit Use N (%)		Anticipated Well-Woman Visit Use N (%)	
		Within past year (n=99)	Longer than 1 year (n=25)	Within 6 months – 1 year (n=25)	Longer than 1 year or DK (n=25)
High	62 (50.0)	50 (80.7)	12 (19.3)	56 (90.3)	6 (9.7)
Low	62 (50.0)	49 (79.0)	13 (21.0)	50 (80.7)	12 (19.3)

^a Note: The associations between PWB and past and anticipated WWV use were not statistically significant at $p < 0.05$.

TABLE XXIII
CRUDE AND ADJUSTED ODDS RATIOS FOR PSYCHOLOGICAL WELL-BEING AND
ANTICIPATED WWV USE

PWB	Crude Odds Ratio† for Anticipated WWV Use Within One Year (95% CI)		Adjusted Odds Ratio for Anticipated WWV Use (95% CI)	
High	2.2	(0.78, 6.4)	3.0	(0.92, 9.9)
Low	1.0	(ref)		

^a Note: The final model for anticipated WWV use adjusts for age, menopause, and primary care provider.

5.1.4.2 Aim 3 Psychological Well-Being and Influenza Vaccine and Mammogram

Use

Although not statistically significant, a higher proportion of women with low PWB obtained a flu vaccine within the past year (53.2%) than women with high PWB (43.5%) (Table XXIV). The final logistic regression model for the association between PWB and the proportion of women who obtained a flu vaccine within the past year was adjusted for healthcare treatment based on race (Table XXV). Stratum-specific analysis showed that marital status modified the relationship between PWB and obtaining a flu vaccine therefore, a marital status*PWB interaction term was also entered into the model. The joint effect of being unmarried and having high PWB resulted in 0.39 lower odds (OR: 0.39, 95% CI: 0.16 - 0.94) of obtaining a flu vaccine. The joint effect of being married and high PWB resulted in 2.4 higher odds of obtaining a flu vaccine, although this association was unstable (OR: 2.4, 95% CI: 0.53 – 10.9).

TABLE XXIV
RELATONSHIP BETWEEN PSYCHOLOGICAL WELL-BEING AND INFLUENZA
VACCINE AND MAMMOGRAM USE

PWB, n (%)	Overall (n=124)	Obtained Influenza Vaccine within past year N (%)		Obtained Mammogram within past 2 years N (%)	
		YES (n=60, 48.4%)	NO (n=64, 51.6%)	YES (n=98, 79.0%)	NO (n=26, 21.0%)
High	62 (50.0)	27 (43.5)	35 (56.5)	48 (77.4)	14 (22.6)
Low	62 (50.0)	33 (53.2)	29 (46.8)	50 (80.7)	12 (19.3)

^a Note: The associations between PWB and flu vaccine use and mammogram use were not statistically significant at $p < 0.05$.

While not statistically significant, a slightly higher proportion of women with low PWB also obtained a mammogram within the past 2 years (80.7%) than women with high PWB (77.4%) (Table XXIV). A final logistic regression model for the association between PWB and the proportion of women who obtained a mammogram within the past 2 years was adjusted for marital status, perceived community health, and healthcare treatment based on race (Table XXVI). Stratum-specific analysis showed that having a primary care provider modified the relationship between PWB and obtaining a mammogram; therefore, an interaction term was added to the model. The joint effect of having more than 1 or no primary care provider and high PWB resulted in 0.22 lower odds (OR: 0.22, 95% CI 0.06 – 0.78) of obtaining a mammogram. The joint effect of having 1 primary care provider and high PWB resulted in 4.2 higher odds of obtaining a mammogram, although this association was unstable (OR: 4.2, 95% CI 0.56 – 32.1) (Table XXVI).

TABLE XXV
CRUDE AND ADJUSTED ODDS RATIOS FOR PSYCHOLOGICAL WELL-BEING AND
INFLUENZA VACCINE USE

	Influenza Vaccine within past year (High PWB, Low PWB – ref)
	Crude Odds Ratio (95% CI): 0.68 (0.33, 1.4)
Effect Modifier	Adjusted Odds Ratio (95% CI)
Married	2.4 (0.53, 10.9)
Not married	0.39 (0.16, 0.94)

^a Note: The final model for flu vaccine use adjusts for healthcare treatment based on race.

^b Note: Interaction term, marital status*PWB, was also added to final model.

TABLE XXVI
CRUDE AND ADJUSTED ODDS RATIOS FOR PSYCHOLOGICAL WELL-BEING AND
MAMMOGRAM USE

Mammogram within past 2 years (High PWB, Low PWB – ref) Crude Odds Ratio (95% CI): 0.82 (0.35, 1.9)	
Effect Modifier	Adjusted Odds Ratio (95% CI)
1 Provider	4.2 (0.56, 32.1)
More than 1 or no provider	0.22 (0.06, 0.78)

^a Note: The final model for mammogram use adjusts for marital status, perceived Community health, and healthcare treatment based on race.

^b Note: Interaction term, primary care provider*PWB, was also added to final model.

5.1.5 Exploratory Tests for Mediation

Exploratory mediation analysis was performed to understand whether autonomous motivation mediated the relationship between PWB and use of preventive services. No statistically significant associations were found in any of the logistic regression series, therefore, mediation conditions were not satisfied when assessing relationships. Autonomous motivation was not found to mediate the associations between PWB and use of past and anticipated WWVs, flu vaccines, or mammograms.

5.2 Qualitative Results

5.2.1 Sample Characteristics

Nineteen women participated in a one-on-one interview and these women were in general demographically similar to the overall study sample (Table XXVII).

Women interviewed ages ranged from 40 to 62 and similar to the overall sample, the majority of women: were not married (n=15, 78.9%); had some college education (n=11, 57.9%); had an annual household income less than \$30,000 (n=12, 63.2%); did not reside with children less than 18 years of age (n=12, 63.2%); and had some type of healthcare insurance (n=18, 94.7%). Eleven of the women interviewed had overall composite PWB scores below the 50th percentile and were thus classified as having low PWB.

Women were asked about their use of flu vaccine and mammograms both qualitatively and quantitatively. Two discrepancies were noted in regard to flu vaccine use and in regard to mammogram use. According to their quantitative survey data, only 2 of the interviewed women had not had a WWV within the past year; 7 had not had a flu vaccine within the past year and, 6 had not had a mammogram within the past 2 years. Based on their interviews, 9 women obtained flu vaccines irregularly or not at all and 4 women had not had a mammogram within the past 2 years (1 unclear from interview) (Table XXVIII). It is not possible to determine the reasons for these discrepancies.

The women interviewed were, either currently or had been, home care aides for either older family members or non-related clients. Some women were currently caring for a family member they lived with, some were still working as home care aides, and others had moved on to other professions. These women had a number of existing or past health conditions, including: cervical cancer, ovarian cancer, colon cancer, heart disease, epilepsy, bronchitis, asthma, panic attacks, pain from various sources, stroke, hypertension, aneurysms, arthritis, diabetes, as well as benign cysts and tumors.

TABLE XXVII
SOCIAL DEMOGRAPHIC CHARACTERISTICS OF SURVEY SAMPLE AND
INTERVIEW SAMPLE

Characteristic, n (%)	Overall Sample (n=124)	Interview Sample (n=19)
Age [mean, standard deviation (SD)]	50.9 (6.9) 40-63 (range)	51.1 (6.7) 40-62 (range)
Marital status		
Married	30 (24.2)	4 (21.1)
Not married	94 (75.8)	15 (78.9)
Education		
< High school	5 (4.0)	1 (5.3)
High school graduate	28 (22.6)	2 (10.5)
Some college	68 (54.8)	11 (57.9)
College graduate	23 (18.6)	5 (26.3)
Income^{a,b}		
< \$30,000	84 (68.3)	12 (63.2)
\$30,000-\$49,999	28 (22.8)	5 (26.3)
\$50,000+	11 (8.9)	1 (5.3)
Children in Household < 18 years		
No children	70 (56.5)	12 (63.2)
≥ 1 child	54 (43.5)	7 (36.8)
Insurance		
Insured	117 (94.4)	18 (94.7)
Uninsured (includes not sure)	7 (5.6)	1 (5.3)

^a n = 123 (survey sample)

^b n = 18 (interview sample)

TABLE XXVIII
INDIVIDUAL INTERVIEW PARTICIPANT CHARACTERISTICS

Participant #	Age	PWB (Score)	Obtained WWV within past year ^a	Obtained Flu Vaccine		Obtained Mammogram within past 2 years	
				Interview (regularly)	Survey (past year)	Interview	Survey
1	46	High (220)	Yes	No	N/A	No	No
2	55	High (215)	No	No	No	N/A	No
3	60	High (232)	No	Yes	Yes	Yes	Yes
4	55	Low (209)	Yes	No	No	Yes	Yes
5	60	Low (130)	Yes	Yes	Yes	Yes	Yes
6	50	Low (183)	Yes	No	No	No	No
7	51	High (221)	Yes	No	No	No	No
8	50	Low (193)	No	Yes	Yes	Yes	Yes
9	55	Low (150)	Yes	No	No	Yes	Yes
10	45	Low (174)	Yes	Yes	Yes	Yes	Yes
11	42	High (241)	Yes	Yes	Yes	Yes	Yes
12	62	Low (199)	Yes	Yes	Yes	Yes	Yes
13	61	High (241)	Yes	Yes	Yes	Yes	Yes
14	42	High (228)	Yes	No	Yes	Yes	Yes
15	48	Low (186)	Yes	Yes	Yes	Yes	No
16	52	Low (176)	Yes	Yes	Yes	Yes	Yes
17	51	Low (187)	Yes	Yes	Yes	Yes	Yes
18	46	High (241)	Yes	No	No	Yes	Yes
19	40	Low (183)	Yes	No	No	No	No

^a Note: Source, Quantitative survey

According to data provided during the qualitative interviews, 7 women had private insurance through an employer or insurance through SEIU (survey data showed that 8 of these women had private insurance, 8 women had Medicaid, 2 women had marketplace insurance, and 1 woman was not sure). Two women who participated in qualitative interviews had no health insurance at all because they felt that they could not afford insurance through the health exchange marketplace. One of these women preferred to just use clinics that offered sliding scale fees and the other woman, who owned her own day care business, only qualified for marketplace plans that she could not afford. This was attributed to her income appearing to be inflated (she had to pay her own taxes because she was self-employed, but her marketplace plan was based on her pre-taxed income, which also varied month to month). A number of women had marketplace insurance or obtained insurance through Medicaid expansion (County Care or Harmony). The majority of women interviewed were mostly satisfied with their insurance coverage. Although some women felt “Obamacare” was sometimes complex and confusing, most women were thankful for it; many did not have insurance before enactment of the ACA.

Only one woman interviewed was familiar with the term “well-woman visit” prior to taking the survey or participating in the interview. For this reason, interview questions were framed as use of annual visits, preventive care, or preventive services as opposed to asking women about well-woman visit use.

5.2.2 Overview of Findings

In qualitative interviews, the researcher explored how women defined, cultivated, and maintained their sense of well-being, as well as factors that threatened their well-

being. The researcher also sought to understand women's use of preventive care and factors that negatively or positively impacted use of well-woman care and specific preventive services. Finally, the researcher examined women's perceptions of connections between well-being and preventive care use. Eight themes were identified in these data. Table XXIX displays these themes and corresponding aims addressed by each theme. Each theme name reflects the study construct represented by that theme. Qualitative data in this section will strictly focus on thoughts and experiences that women shared. Further interpretation of data will be discussed in Chapter 5.3 and in Chapter 6.

5.2.3 Theme 1. Most women used preventive care regularly or obtained treatment for specific conditions when needed. Systemic factors like ease of getting appointments, ability to see desired providers, positive relationships and satisfaction with providers, and affordable insurance or costs facilitated women's use of preventive care.

Most women stated that they used preventive care regularly and obtained treatment for specific conditions when needed. Some saw their providers as often as every three months to obtain prescription refills for chronic condition medications. The majority of women interviewed had seen a provider for preventive services, or a well-woman visit, within the past year. Women discussed a number of systemic factors that facilitated their use of clinical preventive services.

TABLE XXIX
THEMES FROM QUALITATIVE DATA AND ASSOCIATED AIMS

Interview Theme	Aim
<p>1. Facilitators of Preventive Care Use</p> <p>Most women used preventive care regularly or obtained treatment for specific conditions when needed. Systemic factors like ease of getting appointments, ability to see desired providers, positive relationships and satisfaction with providers, and affordable insurance or costs facilitated women's use of preventive care.</p>	1
<p>2. Barriers to Preventive Care Use</p> <p>Women had few current barriers to accessing preventive care; however, those with current or past barriers, identified challenges associated with health insurance, healthcare costs, and discomfort or dissatisfaction with providers.</p>	1
<p>3. Beliefs and Knowledge about Prevention and Preventive Services</p> <p>Women were moderately confident in their knowledge about chronic conditions, screenings, and immunizations recommended for their gender and age; however, there was confusion regarding recommendation timeframes and several misperceptions regarding influenza vaccinations, which resulted in avoidance for some women.</p>	1
<p>4. Meaning of Well-Being</p> <p>Women defined/identified well-being as a holistic concept comprised of physical, mental, spiritual, and emotional health.</p>	2
<p>5. Contributors to Well-Being</p> <p>Spirituality, meditation, and helping others are major contributors to women's well-being. Positive and supportive relationships with others, personal growth accomplished by overcoming challenges, and positive health behaviors, also contribute to maintaining or cultivating women's well-being.</p>	2
<p>6. Threats to Well-Being</p> <p>Women's well-being is greatly threatened by experiences of stress, particularly related to community violence, past traumatic experiences, abusive relationships, financial insecurity, poor physical health, and deaths of loved ones.</p>	2
<p>7. Factors that Motivate Women to Use Preventive Care</p> <p>All women felt that preventive care was important and were often motivated to use well-woman care due to: family history of certain conditions; desire for early detection of illness; witnessing death due to late diagnoses of illnesses; having their own chronic conditions; and, the desire to age well.</p>	3
<p>8. Relationship between Well-Being and Preventive Care Use</p> <p>Women believed that mental and emotional health can impact physical health and most women believed that a higher sense of well-being is associated with a higher likelihood of seeking preventive care.</p>	3

I really want to see the same person. You don't want to have to go back, explain, [or think], "Are they reading your chart good?" I want somebody that's compassionate. I kind of don't like a man doctor because I feel like they don't understand. Your first time, you can figure out, "Is he going to work, or is this doctor not going to work?" If he's not going to work, I don't want to be wasting any time. (Participant 17, age 51, Low PWB)

The ability to get appointments easily and to see their desired providers increased women's confidence that they could access care when needed, usually with providers with whom they had established relationships. Positive relationships and satisfaction with providers, as well as satisfaction with provider locations, played vital roles in women feeling comfortable and trusting providers. Women felt that having providers who listened to them and took time to understand their situations and answer their questions motivated them to continue to seek care. Many women felt more comfortable with female providers, especially for gynecological examinations. Further, providers' efforts to educate and remind women about recommended preventive services were extremely influential in women obtaining those services.

Affordable insurance premiums and copayments; clinics with free or sliding scale fees; government programs that pay for mammograms and pap smears; and no cost preventive care were also influential in enabling women to access care. Many women interviewed had insurance through the marketplace exchange or through Medicaid, which greatly contributed to their ability to access preventive care.

Thank God – right now, I don't have a problem with the insurance that I have right now, which is County Care. I don't have a copay. Usually, they cover 100 percent, and whatever it is that they don't pay for, I usually don't get. (Participant 5, age 60, Low PWB)

5.2.4 Theme 2. Women had few barriers to accessing preventive care; however, those who had current or past barriers, identified challenges associated with health insurance, healthcare costs, and discomfort or dissatisfaction with providers.

Interestingly, women did not express a lot of barriers to getting preventive care. Most women said that they were able to access services at sites that were conveniently located and easy to get to via driving or public transportation, although parking was expensive or difficult for some women. Most women were not caring for pre-school aged children, so lack of childcare was also not a commonly expressed barrier; however, some of these midlife women were caring for their elderly parents. Although many women did not work at jobs where they had paid sick leave, for most, it was relatively easy to schedule healthcare appointments outside of work (on the weekends or early morning), make adjustments to their work schedules, or request time off without much pushback. Only two women discussed difficulty with having no paid sick leave or being able to take time off of work when needed for care. Most women also felt that it was easy to get an appointment when needed and relatively easy to see their desired provider, although there were longer wait periods to see specialists or to get mammograms.

A few women admitted that they had not seen a doctor in a few years or saw a provider irregularly or only when extremely ill. Some stated that they sometimes avoided care (either currently or in the past) due to fear of the visit content or results of visits; the cost of care or not having health insurance; life challenges; prioritizing others' needs over their own; putting off care in hopes that the issue would resolve itself; and

employment conflicts. One woman described her fear of getting a mammogram, which was related to negative descriptions that she had heard about mammography:

I just turned 40, so this is the year that I have to go and get the mammogram, and I'm scared, actually. I haven't even scheduled it, but I'm gonna go because my hospital is [Hospital name], and you can schedule an appointment the same day. But I'm just scared because everybody keeps telling me how it is, and I'm just scared. (Participant 19, age 40, Low PWB).

Discomfort, dissatisfaction, and poor communication with providers also were barriers for women to seek preventive care. Women were much more willing to consistently seek recommended care when they felt they had positive and open communication with their providers. Some felt that many African-American women, in general, were distrustful of providers and therefore avoided seeing them. Some of these feelings of distrust were attributed to perceived differential treatment based on race experienced by them or by family members.

I just don't like doctors. I think they're guessing. I think they're experimenting a lot of times. It's a trust issue. It's a trust issue. (Participant 16, age 52, Low PWB). Some women delayed or avoided getting preventive care because of discomfort with examinations, particularly mammograms and pap smears. One woman complained that a provider was sexually inappropriate with her during an appointment years ago, and since that experience, she has refused to be seen by male gynecologists. She felt that this abuse was also due to her socioeconomic status.

With the pap smears, I did have a bad experience when my son was a little boy. I took him in the room with me, and the doctor – he was being inappropriate. And I guess, whatever he was gonna try to do, I guess he felt like my son is in the room, he's not gonna do it...At the time, I was on public assistance, so I think that was what he did. It was a clinic, still open there on [location]. I just think that a lot of times, they prey on people that they feel wouldn't be credible because you're a part of the system. Who's gonna believe you over me, being a doctor? (Participant 6, age 50, Low PWB).

Some women also felt that the quality of care received was based upon the healthcare institution and location of services. Women felt there was better care at particular hospitals and that certain clinics located in more low-income, minority neighborhoods were not up to par compared with others; they believed that the providers in these locations were not invested in their patients, the communities they serve, or the care they rendered to them. This resulted in women feeling like they needed to go from “place to place” for their preventive care needs and that people who can access highly funded hospitals, or clinics that are not located in low-income areas, received better healthcare.

I guess they [“better” clinics] got all the funding. I don’t know. We have a lot of clinics, but they’re not quality clinics, and that’s just truthful. A lot of them are just over there for the money... to sell the pills to the people. They just giving it to them and making their money because they don’t live there, so they don’t care. So the clinics are not up to par... so you [doctors] come over here with your Mercedes, and you park, and you go [back to] wherever you live and – they don’t care. They don’t care. They’re just, “give me the medical card number so I can overbill it.” We don’t have a lot of quality clinics. (Participant 6, age 50, Low PWB).

Although women were not directly asked about experiences of societal racism and racism within the healthcare system, throughout women’s shared accounts of their experiences, differential treatment or availability of care based on race or socio-economic status was a consistent component of their experiences. For example, women believed that there was a lack of quality mental health care in African-American and low-income communities. Women also felt that homelessness and depression are highly prevalent in their own communities; they acknowledged that people suffering from mental illness were often overlooked or ignored and appropriate services and quality mental health providers were not in place to adequately address them. This is

further exacerbated by mental illness being stigmatized in African-American communities.

Although most women in the sample were insured, being insured did not alleviate all challenges associated with healthcare costs for all women. The most mentioned *past and current* barriers to obtaining well-woman care or maintaining physical health were related to health insurance and healthcare costs. Many women interviewed had insurance through Medicaid or the Illinois Health Exchange, although some did not have insurance prior to the ACA. Some were insured through SEIU health insurance or private insurance through an employer; two women interviewed were uninsured. Women expressed challenges associated with insurance bureaucracies, differences in treatment or access based on insurance type, difficulty getting health insurance, certain providers not accepting certain insurance types, misinformation given regarding insurance, and ability to afford additional costs associated with healthcare.

I think I really didn't understand the barriers of trying to have insurance and maintain insurance until I got older. I have some medications. Thankfully, I'm working. So you get certain discounts when you're working. But still, I have a really high deductible. I think it's \$2,500 a year. I don't have \$2,500. The field I work in, they don't pay a lot. So I owe the hospital, actually. I did find a pharmacy though, for getting my prescriptions, that's cheaper. But when I didn't have insurance, I really became aware of how that impacts a person's being healthy. I couldn't get my medication. So I'm asking people do they have these medications – like my friends. "You got any such and such?" That was crazy. (Participant 12, age 62, Low PWB)

Although only two women interviewed reported not having insurance, some women reported that at different points in their lives, they had problems with: gaps in coverage; high deductibles or copayments; changes in provider networks; and not having coverage for medications (or having to purchase Medicare Part D supplement for medications for those who were eligible).

5.2.5 Theme 3. Women were moderately confident in their knowledge of chronic conditions, screenings, and immunizations recommended for their gender and age; however, there was confusion regarding recommendation timeframes and several misperceptions regarding influenza vaccinations, which resulted in avoidance for some women.

A number of women were moderately confident in their knowledge about screenings and immunizations recommended for their gender and age. They felt they were aware of the “major” preventive services recommended for their age and gender, but admitted that there was some confusion with recommendations, especially when it came to timeframes. There was some confusion regarding the appropriate timing of pap smears and some felt that all women should obtain mammograms every year. Of the 19 women interviewed, 10 of them did not get annual flu vaccines. These women avoided flu vaccinations because they were skeptical or distrustful of them; felt that their immune systems were strong enough to fight off potential infections; believed that the flu shot caused illness rather than prevented it; or felt they were not at high risk for illness.

Flu shots, I just – it just don’t seem right to me...I feel like I have a good immune system, and I just don’t believe in all those shots. Like, I have to give it to my daughter, and I really don’t want to, but I know I have to. But for me, I’ve never had one. (Participant 19, age 40, Low PWB).

Five of the ten women who avoided getting flu shots had a history of respiratory illness. One woman attributed her past experience with pneumonia to the flu vaccine:

You know what? I got a flu shot years ago, and I got pneumonia. And I was like, “I ain’t taking that no more.” (Participant 7, age 51, High PWB)

Women who *did* obtain annual flu shots did so to protect themselves from illness due to the nature of their work or because of current chronic medical conditions (e.g., asthma).

Several women (some of whom worked in a healthcare setting other than home healthcare) were proactive in increasing their health knowledge and literacy and demonstrated a degree of confidence when communicating with providers. Women gained knowledge from a number of sources, including: their own research, social networks, exposure to diverse settings and people, utilizing health education and volunteer opportunities offered by community organizations, and, from actually working in the healthcare field.

I'm the type of person that takes an active part in my health. I work in the medical field so I'm probably a little more aware of how things affect me as an African-American woman. I know that a lot of times, I've seen it myself, that doctors don't take the time to explain the disease process to people. They tell them, "You need to keep this down," and they don't tell them how to go about it, realistically, for their economic status or with the things that's going on in their lives - how they can realistically be proactive in taking care of themselves. When I had to change insurances, I had a whole set of doctors that knew I wasn't the one that you could say, "Oh, your labs are fine," when I'm clearly seeing five things that are abnormal on here. You may not be concerned about them, but explain them to me. Why are these levels up and how are they gonna affect me in the long run? I have to tell the doctor, "No, wait," because you just glanced over the initial paperwork. Let me tell you my family history and what's going on. You're not gonna just push me out the door. (Participant 8, age 50, Low PWB).

When asked about the health literacy of women in their communities, in general, the women interviewed felt that women in their communities were only slightly aware of preventive care recommendations and that they needed more education to fully be able to realize the importance of preventive healthcare and to utilize services. They believed that many women do not seek preventive care due to a lack of knowledge or misperceptions about healthcare. Women felt that this could be improved by more community-centered health educators or mentors, distribution of educational materials or billboards in places that women frequent, or sharing information with and advocating for each other. Some women also felt that African-American cultural factors contributed

to negative lifestyle behaviors (i.e., unhealthy eating, low or no physical exercise) and that these behaviors could be mitigated through educating children at an early age about preventive measures and lifestyle modifications that can be taken to maintain and improve health.

You see all the Susan Komen stuff, all the information on commercials, they're talking about it on TV, they have different symposiums and conferences - you hear it and you see it, but it's like, "Oh, I ain't gotta worry about that. Ain't nobody in my family got no breast cancer, that ain't gonna happen to me." It's not really taken seriously that you need to go get your mammograms. (Participant 8, age 50, Low PWB).

Women believed the conditions that most affected AAW were: cancer (breast, cervical, ovarian, lung), heart disease, hypertension, high cholesterol, substance abuse, diabetes, obesity, glaucoma, mental health issues, fibroid tumors, asthma, depression, and domestic violence. All women had a family history of a combination of these conditions. Most women felt these conditions could be prevented, especially those that are modifiable through diet and exercise, but some were not so certain about cancers or conditions that they were predisposed to genetically. They did however feel that having a family history of a condition is cause to be more vigilant in monitoring or preventing it.

I know that if I lose weight, and I exercise more, and I become more conscious of what I'm eating and cut down on the sugar and stuff, a lot of that stuff will be eliminated. Right now, I take medication for high blood pressure. It's a very low dosage. But I wish I didn't have to take it at all, which maybe I wouldn't if I could get myself in shape and eat better. So yeah, I think they are very much preventable. (Participant 12, age 62, Low PWB).

5.2.6 Theme 4. Women defined/identified well-being as a holistic concept comprised of physical, mental, spiritual, and emotional health.

Overall, women described "well-being" as physical, mental, spiritual, and emotional health. Women described spiritual and mental aspects of well-being (WB) as:

being able to effectively cope with life's challenges or difficult situations; spiritual faith or practices; being balanced and having peace of mind; ability to make sound judgments; and, general contentment and satisfaction with life. Women felt that being able to set and accomplish goals and have a purpose in life were also aspects of well-being. They also believed that taking care of one's health by engaging in positive health behaviors (e.g., as exercise, eating well, sleeping, getting preventive care) and avoiding negative health behaviors (e.g., excessive drinking, smoking) contributed to physical aspects of well-being.

A woman with an *ideal* sense of WB was described as well-rounded with a positive outlook or attitude and a general sense of happiness and peace of mind. Participants felt that women with *ideal* WB have positive relationships with family and friends and with supportive social networks; engage in positive health behaviors; are physically healthy (e.g., healthy weight, not taking a lot of medications); and take care of their appearance. Further, they believed women with *ideal* WB are goal-oriented and pursue one's purpose in life; are financially secure; have a positive self-image and independence; have positive coping skills; live in a peaceful home; and possess a spiritual connection or have spiritual health. One participant described a woman with an ideal sense of well-being as:

She would be confident. Her self-esteem would be high. She would know how to place boundaries. She would be genuine, open minded to new ideas. She would be empathetic. She would be financially secure. She would try to eat right, eat a balanced meal. She would try to exercise regularly, I think. She would have good spiritual connection, a relationship with a higher power. (Participant 12, age 62, Low PWB)

When asked how similar they are to their ideals of a woman with a high sense of WB, most women characterized themselves as being optimistic and having a positive

attitude and image of themselves. Women discussed how they had to overcome some personal challenges and negative situations in order to get to their current positive mindset, and some described being able to maintain a degree of positivity even in the midst of dealing with challenges.

Yeah, because I try not to be just Debbie Downer. I know this because sometime after I had the stroke, I tried to have a pity party, and I was like, "Wake up, look at yourself in the mirror. Your face isn't twisted. You're getting use of things back. Be grateful." I was always grateful, but I was like, "Now stop it right now! You've got no time for that, so just don't do it." (Participant 9, age 55, Low PWB)

5.2.7 Theme 5. Spirituality, meditation, and helping others are major contributors to women's well-being. Positive and supportive relationships with others, personal growth accomplished by overcoming challenges, and positive health behaviors, also contribute to maintaining or cultivating women's well-being.

The most mentioned contributors to women's WB were spiritual practices and helping others. All women mentioned that their spiritual faith, attending church services, prayer, or meditation provided comfort and helped them effectively cope with difficult situations. Many attributed their ability to overcome difficulties to reliance on a higher power or a spiritual practice, or realizing their situation could be worse and choosing to see the positive side or positive outcome of their challenges.

Well, I've overcome some really negative situations in life, and I think I've just been remaining optimistic and relying on the power that's far higher and greater than myself. That's one thing. And trying to just focus on drawing out the strength, and basically like if life gives you lemons, make lemonade. I've learned to just not stay stuck in a rut, you know. Like having a happy or a good spirit sometimes, or just a good outlook on life, despite whatever is going on once you get past that initial shock of whatever it is. (Participant 1, age 46, High PWB)

Most women either worked or volunteered in healthcare or nonprofit organizations. Many expressed a passion for being able to serve others in social or

health services such as substance abuse counseling, working as part of housing assistance programs, taking care of older adults, and nursing. Some women discussed strong bonds and relationships with their home care clients. One woman demonstrated how her love for helping others contributed to her well-being; she created a neighborhood safe zone for children in an empty lot next to her home with discarded or refurbished materials. This same woman also made coffee every morning for neighborhood drug dealers to give them room to pause before their next actions in hopes of deterring violence.

I have a vacant lot that's attached to my house. I talked to my husband, I was like, "You're so handy, maybe you could build this," because they demolished the house right next door to us. He built the fence around it and now we have it. Mind you, that's not our property at all, but we did that just to keep my anxiety down because I wouldn't want to come outside, I ain't let the kids come outside, I was scared. We let the kids in on the block who are nice. We got a basketball round, a trampoline, and we had a pool. I make hot dogs and all that for all of them, so they can eat. I don't know if these kids are eating, I don't know. I don't know that they have people that take time out with them, I don't know. That's not my job to know, my job is to make them feel good and have a smile on their face and teach them how to interact with people and be nice. Therefore, you can take it and spread it somewhere else which will be good, because now you won't be shooting nobody at the age of nine or eight. Burning people up in a garbage can, you know what I'm saying? (Participant 14, age 42, High PWB)

Coping skills and techniques helped women create or maintain a sense of well-being. For many, this was related to their spiritual practice, but ultimately other coping mechanisms that allowed them to positively reframe difficult situations and maintain or create a positive attitude were also used. Pursuing and fulfilling their passion or life's purpose as well as personal growth gained from accomplishing goals and overcoming challenges also contributed to women's WB.

Many women also felt their own sense of WB was related to having positive, healthy relationships with partners, family, friends and social networks. Being around

positive people and having positive relationships with others helped to make women stronger in life, offered them emotional support when needed, and motivated them to pursue goals. In addition to family and friends, women also received social support from their networks and support systems such as church members, counselors, community members, civic organizations, and co-workers.

I have a few friends who we participate in 12 Steps [together]. I'm a recovering addict. So there is that support system that I have that helps me when I'm struggling. One thing I've learned about 12 Steps is that you always continue to work on improving yourself, looking at things to keep growing. So it helps me a lot... I think my support system is everything to me. (Participant 12, age 62, Low PWB)

Through trials in life and over time, women gained a sense of independence, maturity, wisdom, and personal growth, which led to feelings of autonomy or confidence and control of one's own life. Autonomy and independence contributed to women's WB, providing them with a feeling of mental peace, clarity, and focus. For some women, autonomy resulted from leaving negative or abusive relationships. A few women were currently taking classes or just finished schooling to expand their professional development, motivated by their desire to learn and help others. In relation to autonomy, a number of women mentioned that having secure and affordable housing greatly contributed to their WB. Some were able to enroll in housing programs that allowed them to have their own apartments, often for the first time.

Finally, engaging in positive health behaviors (e.g., eating healthy foods, being active), possessing physical health, and physical appearance also contributed to some women's WB. Music, dancing, and recreational activities (e.g., shopping, reading, journaling, relaxation) were methods women used to cultivate or create a sense of well-

being when needed. Additionally, attending medical checkups, getting adequate sleep, and refraining from substance abuse also contributed to their WB.

I have a lot of things that I do to take care of myself. I have kind of adopted this house that's in Oak Park. I go get my ice cream and it's a real beautiful house. It looks so big, I just dream. I go down to Oak Park and I sit by the street by this big house. I have on spa music in my car, I eat my ice cream, and then I relax there. That's one thing. Another thing is I get on the track. I put on some jogging pants, get on the track, and I run around the track. My last one is to run around at a fast pace because I want to let off some steam. (Participant 14, age 42, High PWB)

5.2.8 Theme 6. Women's well-being is greatly threatened by experiences of stress, particularly related to community violence, past traumatic experiences, abusive relationships, financial insecurity, poor physical health, and deaths of loved ones.

By far, the biggest factor that negatively impacted women's WB was stress. The most common stressful experiences were related to violence in the communities in which women lived. Many women stated that community violence was the biggest impediment to their WB and peace of mind, especially when considering the safety and WB of their children.

No, I don't feel safe. I don't feel safe coming out of my garage. I don't feel safe walking through my yard. I don't feel safe sitting on my porch. I'm not in what you would classify as a high-risk area, I'm on the southeast side of Chicago. It's not what they would call this really, really bad neighborhood. There are some things that go on there and you're like, "Really? I just left that area." No, I don't feel particularly safe over there, but my mother won't move. (Participant 16, age 52, Low PWB)

A large majority of women had personally experienced or witnessed violence in their communities. These women felt like they were "stuck" living in violent communities and constantly dealt with the lingering stress resulting from witnessing or experiencing violence; worrying about the safety of their children; and, living with the constant fear

and anxiety associated with losing their lives or the lives of their loved ones. For example, one woman stated that she suffered from panic attacks due to living in constant fear; another discussed the stutter that her nine year old son developed after witnessing a murder in front of their home and his difficulty concentrating in school thereafter; and, another woman's granddaughter was shot as an innocent bystander. Some women still lived in their family homes and neighborhoods they grew up in and were either reliant on rental income or could not afford to move elsewhere, which again, resulted in the feeling of "being stuck." Many felt their communities had radically changed for the worse over the years. A woman who owned a family building, where her adult children also lived said:

It affects me tremendously. This past May, two people got killed in front of my house. It was gang related. And it just messed me up because I started saying "My God, my family was just out there. It's 11:00 in the morning. What is this?" And I think I've been traumatized ever since then. What can I do about it? I don't know. I feel like I'm stuck in my building...And it's affecting everybody in the neighborhood. My grandchildren can't go in the front and play. The quality of my environment is just the pits. So I believe if I could have that [a safe community], I just believe I would be in nirvana. (Participant 12, age 62, Low PWB)

Many women had also experienced extensive trauma in their lives. For example, one woman was raped by three white college athletes during her last semester in college and was too traumatized to finish school. Another woman lost her 8 year old son to illness. One woman was essentially homeless and living with a friend whose house caught on fire causing her to lose the little that she had. Some women experienced stress from negative or abusive relationships with intimate partners or family members. One woman discussed how she was in an extremely abusive relationship and did not care whether she lived anymore, but her near death experience from a severe asthma

attack was the catalyst that motivated her to leave the relationship only two months prior to the interview.

I'm not gonna sit here and sugar-coat it. The way I was feeling when I was in the house, sometimes I just felt like I wanted to die. That's why I was telling him to not take me to the hospital, because that's just how he was making me feel, like I didn't want to be in – wanting – getting tired of being on this earth, getting treated the way I was getting treated. And I just said I wanted to die. So that's why he wound up calling the hospital, and they came and got me. Because I actually didn't want to die. I don't know why I said it. Then I started thinking about my sister and my father, my friends – I said, "you go on with your life, you ain't got to be here." That's another thing that made me get up and leave. "You were doing good till you met this man. You were doing real good." So I had to get out of that state of mind of wanting to die, and just leave. I just left. (Participant 15, age 48, Low PWB).

Another source of stress for some women was having a low-income or lacking work, which led to: housing insecurity or inability to move; feeling like they were not able to improve their situations or fulfill their life's passion through their careers; or inability to maintain a healthy lifestyle, such as eating healthy foods. Some women reported physical and mental strain from their jobs. Women currently working as homecare aides generally enjoyed caring for their older clients, but reported mental distress when clients got sick or died, or felt mentally or physically drained from the work and dealing with clients' families. One homecare aide was limited in the number of clients she could care for due to their homes exacerbating her asthma. Other women (in other professions) had difficulties with co-workers, had trouble finding work in desired professions after attending school and receiving certifications, or simply just did not enjoy their jobs.

Not having time for themselves or having to prioritize others was a source of stress for some women. Women experienced stress due to caretaking of terminally ill family members and homecare clients. They described experiences of neglecting

themselves in order to fully care for others. Additionally, most women discussed difficulties in their lives dealing with the deaths of loved ones.

Over the last 20 years, I lost two sisters, a brother, both of my parents, and my significant other. My two older sisters – one of them, I took care of - they died eight months apart from each other. My parents died three years apart from each other. My mother had Alzheimer's; my father had cancer. I took care of both of them, with the help of my brother. My significant other – we had issues, you know, and he got sick and died. And I was grieving and not realizing that – and drinking, to help suppress that, or deal with it, or however you want to put it. And I was just functioning. (Participant 2, age 55, High PWB)

Interestingly, for some women, prioritizing others over themselves was a coping mechanism as they dealt with their own life challenges; it was often a means of deflection or avoidance of their own challenges.

Finally, for some women, poor physical health or health behaviors (e.g., substance abuse, smoking, or low/no physical activity) diminished their WB and was also a source of stress. They reported physical ailments that caused them a great deal of physical pain, which in turn, negatively impacted their overall sense of well-being and quality of life. Women reported dealing with conditions such as ovarian and cervical cancer, injuries, hypertension, diabetes, pneumonia, asthma, and epilepsy. Although many women at the time of interview, were in a place where their mental, emotional, and spiritual health were in, or moving toward a positive place, many felt they needed to make additional improvements such as, eating healthier, exercising more, and managing weight.

Just the aches and pains that come with being a woman and getting older. It's a little rough, you know. My bones kind of giving out on me and stuff like that. But, other than that, overall, I'm pretty well off. I'd just like to try to exercise more, eat a little better, I don't do a lot of things I did when I was younger. So, I'm just kind of settling into my age and my peace. So, it's going so far okay. You never know, but you just go day by day. (Participant 4, age 55, Low PWB).

Two women talked about having low self-esteem based on physical appearance, which they attributed to existing health conditions. Women also attributed some negative health conditions or exacerbations, like hypertension and asthma attacks, to stress.

Hypertension is stress. It's the same thing. (Participant 15, age 48, Low PWB)

One woman described a link between societal stress that African-Americans face, stress from violence in communities, and the ability to prioritize physical health and preventive care:

I think that black people are really stressed out. And they're just trying to survive. I think we're just trying to survive...If I go into a neighborhood where there are white people, I see young people jogging. I see them outside playing with the dogs. I see them going into restaurants being very, very conscious of what they're ordering and what they're eating. They're at the beach swimming. They're doing a lot of things to help keep down disease. In my neighborhood, I don't see that. First of all, they don't jog much out there. We have some school tracks that some people will use, but it's not carefree. It's like you're always vigilant. So a lot of times, they don't partake in [preventive] care. (Participant 12, age 62, Low PWB).

5.2.9 Theme 7. All women felt that preventive care was important and were often motivated to use well-woman care due to: family history of certain conditions; desire for early detection of illness; witnessing death from late diagnoses of illnesses; having their own chronic conditions; and, the desire to age well.

All women felt that preventive care was important. The most common motivators for women to use preventive care were hereditary factors or family history of certain conditions and the desire to catch conditions early before they resulted in worsening consequences or became fatal. Many women had experiences of family members or friends dying or being diagnosed in late stages of disease with conditions such as breast or colon cancer. Most women had family members who had passed away from a type of cancer and had family histories of diabetes, hypertension, or heart disease.

I've seen too many in my family pass away unnecessarily because they didn't go get the screenings or they didn't do what the doctor told them, just being stuck in their ways. I see how the disease process has passed down into generations. People are gone that it makes no sense for them to be gone, they could still be here. (Participant 8, age 50, Low PWB)

Moreover, many women had chronic conditions themselves; one woman interviewed was a cancer survivor. Having an existing chronic condition also influenced women's regular use of provider services and preventive care. Women also thought that not knowing the status of their health was more stressful than knowing and actively dealing with a potential illness.

Interpersonal relationships were strong motivators for women's use of preventive care. A few women stated that the reason they utilized preventive care was because of their upbringing. Their mothers either served as examples of individuals who used preventive care or influenced other women to take care of their health or seek preventive care. In turn, many women stressed that their motivation for being healthy was to be healthy for, and to be an example to their families. Social support networks significantly influenced women to seek care. Friends, peers in community organizations, and simply associating with people who engaged in positive health behaviors motivated and educated women about the importance of obtaining preventive care services, eating healthy foods, and exercising. In turn, many of the women interviewed acted as the source of encouragement for others to get care and maintain their health. They also offered emotional support and information about available resources to others.

I'm in a professional women's group. We meet once a month. They're from all walks of life and they provide us with stuff to eat. And we're eating kale and, you know, different things. And I found out I like sushi. I think I'm learning and finding out about eating healthier and not over-indulging in things. I found out about Black Girls Run. They're having a thing coming up, so – and I've contacted one of the local groups here, and she just told me, "When you're ready, just let me

know, and we can pick you up” – because I don’t have a car. I can walk with them. And having that support would be good to help push me more to actually do a run. (Participant 2, age 55, High PWB)

Women had mixed opinions about whether they felt preventive care was important to other women in their families or communities. They shared stories of other women in their lives who avoided preventive care, not because they thought it was not important, but because they were fearful of the results or costs; put their families’ care before their own thereby neglecting themselves; distrusted providers; or did not see prior examples of people in their lives who utilized preventive care or talked about it.

I think it’s a cultural thing. I hate to say that, but I feel as African-Americans, we tend to not really want to accept what the doctors say or don’t trust the doctor. They’re scared to know what the outcome is. (Participant 9, age 55, Low PWB)

A number of women were also autonomously motivated and proactive in maintaining their mental and physical health and were dedicated to aging well. These women regularly acquired knowledge about well-woman care by reading medical literature (e.g., medical pamphlets), conducting self-research, tracking healthcare services, monitoring their health, engaging in positive lifestyle behaviors, and asking questions of their doctors.

It’s all about us taking the time out, taking the initiative to find out. I read everything. What I read there can help me or be beneficial to me later on in life. If I see some posters saying ‘How to Decrease Your Stress Level’ – I’m there. I don’t have to be paid; I need to do what I need to do to decrease my stress level. I’m there. (Participant 14, age 42, High PWB).

5.2.10 Theme 8. Women believed that mental and emotional health can impact physical health and most believed that a higher sense of well-being is associated with a higher likelihood of seeking preventive care.

All women believed in a mind-body connection and that mental and emotional health can impact physical health. They believed that a negative mental or emotional state can result in physical illness or negative physical manifestations.

It's all connected... sometimes I feel like when I'm stressed or I'm upset, it does have an effect on my physical being, because I might feel ill, I might feel tired, I might feel sluggish, I might be dragging, I might even feel sad, depressed.
(Participant 19, age 40, Low PWB)

As described above, women strongly believed that stress plays a major role in the manifestation of symptoms or deterioration of physical health.

People don't really understand what stress does to you. You look around and you're in the hospital because you're just stressing so much. You're gonna have a heart thing, you know, or you end up with migraines because you stress so much. (Participant 10, age 45, Low PWB)

Most women concluded that a person with a high sense of well-being is more likely to seek preventive care than a person with a low sense of well-being. Women felt that if an individual is happy or content, she has a desire to stay in a positive state and is more engaged in life. This individual desires physical, mental, and emotional well-being, and as such, she is more likely to maintain this holistic sense of well-being by seeking preventive care. A person with a low sense of well-being may be debilitated by mental or emotional suffering and may not be able to or be interested in dealing with anything aside from her psychological pain.

People that's depressed, they kind of put things off. I don't think black people get a fair share of mental health care...I think you lose interest of what's around you, what's going on with you. And you're less likely to make that call for a doctor's appointment. You're less likely to eat well. [When you feel good], you're engaged into yourself, taking care of yourself. It's just a double-edged sword really. If you're feeling good, you want to feel better. If you're down, you don't care.
(Participant 13, age 61, High PWB)

Alternatively, two women felt that a person with a high sense of well-being is less likely to seek care because that individual generally feels good and may delay or not see a need for preventive care.

[People with a low sense of well-being] know they need some kind of help. The person who is upbeat and happy - they're bulletproof. They're not thinking, "Oh, let me go and check this out." They're happy. Life is good. You're not thinking in those terms when things are good. You're only thinking in terms like that when things are bad, especially if you don't have the mindset of, "Hey, let me take care of myself." (Participant 18, age 46, High PWB)

5.3 Mixed Methods Results

5.3.1 Survey and Interview Sample Comparisons

As stated above, women participating in qualitative interviews were social demographically similar to the overall study population. The SEIU HCII collects limited social demographic data on its members and therefore, it was not possible to determine how the study sample differs from other SEIU HCII members who did not take or have access to the survey.

5.3.2 Aim 1 Intra/Interpersonal Factors Associated with Well-Woman Visit, Influenza Vaccine, and Mammogram Use

Prior to presentation of mixed methods results for Aim 1, a brief review of rates of preventive services use follows. To review, women in this study had relatively high utilization of WWVs and mammograms, and low utilization of flu vaccines (Table XXX). Although all rates of utilization were below Healthy People 2020 targets, the majority of women obtained a WWV within the past year (79.8%) and a mammogram within the past 2 years (79%). Preventive services that were utilized most often were blood

TABLE XXX
CLINICAL PREVENTIVE SERVICES RECEIVED (n=124)

Preventive Service	n (%)
Past 12 months	
Blood pressure	122 (98.4)
Cholesterol	98 (79.0)
Blood stool test ^b	28 (22.6)
Glucose	107 (86.3)
Influenza vaccine	60 (48.4)
Well-Woman Visit	99 (79.8)
Within recommended time frame^c	
HIV	91 (73.4)
Mammogram	98 (79.0)
Pap smear	96 (77.4)
Pneumonia vaccine	42 (33.9)

^a Note: No/don't know categories combined; missing response assumed no/don't know

^b Note: This includes blood stool test only, excludes colonoscopy

^c Note: Mammogram (past 2 years), Pap smear (past 3 years), HIV & Pneumonia vaccine (ever)

pressure and glucose tests. For some women interviewed, their first introduction into the healthcare system, aside from childhood immunizations, was pregnancy, which led to routinely seeing the doctor for preventive care thereafter. Two women had not received a mammogram ever at the time of the interview (4 had not had a mammogram within past 2 years). One of these women had recently turned 40 and was aware that she needed to schedule an appointment, but expressed her fear of getting a mammogram. The other woman (age 50) said she was just procrastinating. Of those who had received a mammogram, all except one woman got them regularly. Ages women received their *first* mammogram ranged from 18 to 50. Women who received a mammogram before

the age of 40 did so because they detected a lump, had a family history of breast cancer and requested one, or the age recommendation for first mammogram was 35. Only 10 women interviewed received annual flu vaccines regularly and only 48.4% of women surveyed had obtained a flu vaccine within the past year.

A summary of interview, survey, and integrated results for Aim 1 are listed in Table XXXI. Results from both qualitative and quantitative results converged to indicate three main findings regarding facilitators of, barriers to, and beliefs and knowledge associated with preventive care use:

1. Women's use of preventive care services was greatly influenced by positive provider relationships and providers who educated and reminded women about getting preventive care services when needed.
2. Most women did not currently experience many barriers associated with getting care, but those who identified current or past barriers, described barriers associated with healthcare costs, insurance, provider distrust or discomfort, provider wait times, and prioritization of other demands or needs.
3. Greater knowledge of preventive care services was associated with greater use of preventive care services. The converse was especially evident with respect to influenza vaccination. Influenza vaccines were greatly underused by this sample of women, possibly resulting from misperceptions about flu vaccination.

TABLE XXXI
AIM 1 SUMMARY OF INTEGRATED RESULTS

Interview Theme	Summary of Survey Results	Integrated Results
Aim 1		
Construct 1: Facilitators of Preventive Care Use		
Most women used preventive care regularly or obtained curative care when needed. System factors like ease of getting appointments, ability to see desired providers, positive relationships and satisfaction with providers, and affordable insurance or costs facilitated women's use of preventive care.	<ul style="list-style-type: none"> Women who received counseling on 7 or more services were more likely to have obtained a WWV, flu vaccine, or mammogram. Most women had strong, positive communication with providers and these women were also more likely to use PCS. 	<p>Convergence –</p> <ul style="list-style-type: none"> Positive provider relationships and communication facilitates women's use of preventive care
Construct 2: Barriers to Preventive Care Use		
Women had few barriers to accessing preventive care; however, many had past or current challenges associated with health insurance, healthcare costs, and discomfort or dissatisfaction with providers.	<ul style="list-style-type: none"> 17% of women reported having current barriers to preventive care use 93% had strong positive communication with providers 94% were insured Women with barriers had lower odds of WWV, flu vaccine, and mammogram use 	<p>Convergence & Expansion –</p> <ul style="list-style-type: none"> Women had few <i>current</i> barriers to preventive care use; but those with barriers had lower rates of preventive services use Women's access to insurance was facilitated by the ACA and private insurance Barriers reported via survey and interviews were similar
Construct 3: Beliefs and Knowledge about Prevention and Preventive Services		
Women were moderately confident in their knowledge about chronic conditions, screenings, and immunizations recommended for their gender and age; however, there was confusion regarding recommendation timeframes and several misperceptions regarding influenza vaccinations, which resulted in avoidance for some women.	<ul style="list-style-type: none"> Women whose beliefs about the frequency of obtaining specific clinical preventive services were highly consistent with recommendation guidelines had 3 - 4 times higher odds of WWV, flu vaccine, and mammogram use 59% of women with high knowledge consistency obtained a flu vaccine in past year and only 24% with low knowledge consistency obtained a flu vaccine within past year 	<p>Convergence & Expansion –</p> <ul style="list-style-type: none"> More knowledge of preventive care is associated with greater use of preventive care services Low rates of flu vaccine use might be explained by misperceptions regarding flu vaccine

Survey results showed that women who received counseling on 7 or more services were more likely to have obtained a WWV, flu vaccine, and a mammogram. The vast majority of women had strong, positive communication with providers and these women were also more likely to have utilized WWVs and mammograms. During interviews, women emphasized that having trusting, comfortable relationships with providers who listened to them, as well as providers who educated and reminded them about getting preventive services, were both major factors in whether they visited providers regularly and obtained preventive services. Women emphatically stated that if they had a provider who they were not comfortable with or did not trust, they would refuse to see that provider again or forego getting care. In line with survey results, most women interviewed had providers that they were satisfied with and most women surveyed and interviewed saw the same provider at the same locations, usually hospital clinics. System factors such as the ability to see desired providers, get appointments when needed, and affordable insurance costs or costs of services, also promoted women's use of preventive care.

Only 17% of women surveyed reported having any current barriers to preventive care use. The interviews helped to explain this result. Interviews revealed that most women were not caring for school aged children and were able to see providers who were close to their homes or easily accessible via car or public transportation, thus childcare and transportation were not likely barriers for the majority of women. Most women were able to get appointments at convenient times and were empowered to change providers if they were unsatisfied. Interviews revealed that access to affordable insurance was a major facilitator of women's use of preventive care. The large majority

of women were insured either through private insurance, the marketplace exchange, or through Medicaid. It appeared that being part of a labor union that offered private insurance and ACA mandates were significant factors in women being able to access care. During interviews, a number of women discussed difficulties with obtaining insurance and managing healthcare costs prior to the ACA. However, for some women managing healthcare costs, even with health insurance, was still difficult.

Survey results showed that women with multiple barriers to preventive care use had lower odds of anticipated use of WWVs, obtaining flu vaccines, and obtaining mammograms, indicating that barriers serve as a deterrent to women's intentions and ability to access preventive care. Among women *with* barriers, none had received a WWV within the past year. Fifty-three percent of women with *no* barriers obtained a flu vaccine, whereas only 28.6% of women who reported barriers to preventive care use had obtained a flu vaccine. Likewise, 82.5% of women with no barriers had obtained a mammogram, whereas 38.1% of women with barriers had not obtained a mammogram. Women interviewed discussed either current or past challenges with obtaining preventive care. Women's reasons for avoiding care were similar among survey and interview respondents. Women who did not use preventive care feared the content of the visit or visit results; were concerned about the costs of care or being uninsured; had confusion over services; faced conflicting demands or prioritized others' needs over their own; expressed discomfort with providers or examinations; had distrust of providers; or were concerned about the quality of care based on location of services.

More *knowledge* about preventive care services was associated with greater *use* of preventive care services. Women interviewed were moderate to highly confident in

their knowledge about chronic conditions and preventive service recommendations, but some women demonstrated uncertainty about timeframes for certain screenings, particularly mammograms and pap smears. This was also reflected in survey results.

Many women interviewed were highly motivated to increase their health literacy possibly due to the nature of their work as home care aides. Many of the women who no longer worked as home care aides were still working in healthcare, which might explain women's higher knowledge levels with respect to preventive care. Based on the survey, women whose beliefs about the frequency of obtaining specific preventive care services were highly consistent with recommendation guidelines had significantly 3 to 4 times higher odds of obtaining a WWV and flu vaccine within the past year and a mammogram within the past 2 years than women whose beliefs were less consistent with recommendation guidelines. For example, 59% of women whose beliefs were highly consistent with guidelines obtained a flu vaccine, whereas only 24% of women with low consistency obtained a flu vaccine within the past year. Low overall rates of flu vaccination might be explained by misperceptions regarding flu vaccine, which were revealed during interviews. Approximately half of women interviewed (n=9) stated that they did not get flu shots every year or ever. These women avoided influenza vaccination because they were skeptical or distrustful of it, felt that their immune system was strong enough to fight off a potential infection, believed that it caused illness rather than prevented it, or felt they were not at high risk for illness. Five of the women who avoided getting flu shots had a history of respiratory illness. Women who *did* get flu shots regularly did so to protect themselves from illness due to the nature of their work or because of past or current medical conditions (i.e., asthma, pneumonia). It is

plausible that increased education and counseling regarding the need for and safety of flu vaccination might positively impact uptake.

5.3.3 Aim 2 Risk and Protective Factors Associated with Psychological Well-Being

A summary of interview, survey, and integrated results for Aim 2 is provided in Table XXXII. Results from the quantitative and qualitative results both converged and diverged to reveal three main findings relating to contributors and threats to well-being:

1. Personal growth, positive relationships, autonomy, and purpose in life greatly contributed to women's well-being. Receiving needed emotional support stemmed from positive relationships with others.
2. Although spirituality, prayer, and meditation were the most discussed contributors to well-being during interviews, most women surveyed did not feel that their spirituality impacted their well-being.
3. While stress due to community violence greatly threatened women's well-being, women believed there was a deficit of mental healthcare uptake in African-American communities and a deficit of quality mental healthcare in low-income areas.

The PWB dimension with the highest score for women surveyed was personal growth, followed closely by autonomy, personal relations with others, and purpose in life, meaning that women these dimensions were salient components of women's PWB. These dimensions were also highly discussed during the interviews. Many women interviewed shared stories of overcoming trauma, such as rape, abusive

TABLE XXXII
AIM 2 SUMMARY OF INTEGRATED RESULTS

Interview Theme	Summary of Survey Results	Integrated Results
Aim 2		
Construct 4: Meaning of Well-Being		
Women defined/identified well-being as a holistic concept comprised of physical, mental, spiritual, and emotional health.	Not captured quantitatively	
Construct 5: Contributors to Well-Being		
Spirituality, meditation, and helping others are major contributors to women's well-being. Positive and supportive relationships with others, personal growth accomplished by overcoming challenges, and positive health behaviors, also contribute to maintaining or cultivating women's well-being.	<ul style="list-style-type: none"> • Highest scored PWB dimension was personal growth, followed closely by autonomy, positive relations with others, and purpose in life • Women who always or usually received needed emotional support had 5.4 times higher odds of high PWB compared to women who sometimes, rarely, or never received needed emotional support • Although not significant, women who felt spirituality impacted their sense of WB, had lower odds of high PWB; 53.2% of women did not feel that, or were not sure if, their spirituality impacted their well-being 	<p>Convergence & Expansion – Personal growth and positive relations with others are both associated with high PWB. Personal growth and helping others was related to autonomy and purpose in life. Positive relations with others were related to receiving emotional support and having support networks from various sources.</p> <p>Divergence – Qualitative data showed spirituality was a major contributor to women's well-being. Quantitative data showed no significant association between spirituality and high PWB</p>
Construct 6: Threats to Well-Being		
Women's well-being is greatly threatened by experiences of stress, particularly related to community violence, past traumatic experiences, abusive relationships, financial insecurity, poor physical health, and deaths of loved ones.	<ul style="list-style-type: none"> • Lowest scored PWB dimension was environmental mastery • 50.9% of women chose gun violence as the health problem that most impacts their community; 41.5% chose mental health problems 	<p>Convergence & Expansion –</p> <ul style="list-style-type: none"> • Stress due to community violence greatly threatened women's well-being • Uptake and access to quality mental healthcare is a barrier for African-American and low-income communities

relationships, drug addiction, and witnessing or experiencing gun violence. Women believed that overcoming these challenges helped to make them stronger and allowed them to grow in knowledge, wisdom, self-awareness, and to expand their potential. This personal growth led to feelings of autonomy and independence. Women discussed how financial, housing, and personal insecurities diminished their well-being; those who were able to overcome from these difficulties shared that this effort resulted in them being able to act of their own volition, which in turn positively impacted their well-being. Helping others was an important facet of all interviewed women's lives and was also a major contributor to their well-being. For these women, helping others was directly related to their identified purpose in life.

Women interviewed also discussed how positive relationships with family, friends, as well as professional and social networks strengthened them and provided them emotional support. Based on the survey, high emotional support was significantly associated with 5.4 times higher odds of high PWB compared to women with low PWB. Sixty-one percent of women always or usually received emotional support that they needed from family and friends. When asked in the interviews what other persons or organizations women turned to most to receive emotional support, aside from family and friends, surveyed and interviewed women also indicated that they received support from their churches or spiritual families, coworkers and other women in SEIU HCII, counselors or psychiatric providers, support groups, and one women (surveyed) indicated receiving support from a suicide support line. Thirty-nine percent of surveyed women sometimes, rarely, or never received needed emotional support from family or friends and among these women, 73.9% had low PWB.

Survey and interview data diverged in relation to spirituality. Spirituality, in the forms of faith, spiritual practices, prayer, or meditation, was mentioned by all women interviewed as a source of well-being and comfort during difficult times. Most women used the positive reframing of difficult situations and/or spirituality as coping mechanisms. For example, many women described dealing with challenges by “putting it in God’s hands.” Conversely, women surveyed were asked if they felt their spirituality impacted their sense of well-being, to which 53.2% of women replied no or they were not sure. Moreover, women who felt their spirituality did impact their well-being had lower odds of high PWB (although not significant). However, three points should be noted in regard to the survey question used to ascertain if women felt that their spiritual beliefs impacted their well-being: 1) women were not asked if spirituality positively or negatively impacted their well-being; 2) spirituality was not measured as a single, independent construct; and, 3) “spirituality” is a broad term that is subject to multiple interpretations. Therefore, concrete conclusions about associations between spirituality and PWB cannot be made with survey data. Nonetheless, over half of women surveyed did not perceive an association between spirituality and well-being, whereas all women interviewed clearly believed spirituality was a major contributor to their well-being. The interviews allowed for a more in-depth discussion of meaning and interpretations of spirituality, so divergence may be attributed to deficits in the survey question.

The lowest scored PWB dimension was environmental mastery. To review, a low scorer on the environmental mastery subscale is “one who has difficulty managing everyday affairs; feels unable to change or improve surrounding contexts; is unaware of surrounding opportunities; and, lacks sense of control over external world” (Ryff, 1995,

p.101). Many women interviewed felt that community violence was the most significant threat to their well-being. Direct and indirect experiences of community violence resulted in chronic stress and anxiety, particularly in relation to women's safety and the safety of their families. Many women felt that they were stuck in these communities and one woman could not conceive that it was possible to live in an environment free of crime. Women surveyed were asked about the three most important factors for a healthy community (Figure 6). Fifty-three percent chose low crime/safe neighborhoods, 50.9% chose good jobs/healthy economy, and 36.4% chose good place to raise children.

When asked about the three most important health problems that impacted the health of people in their neighborhoods, 50.9% of survey respondents chose gun violence, 41.5% chose mental health problems, and 35.6% chose cancers (Figure 7). Women interviewed also discussed the lack of quality mental healthcare providers in their communities and how mental health problems go untreated for many people in their communities, which further exacerbates negative mental health manifestations and experiences. These data reveal that community violence is a public health problem that negatively impacts the health of African-American women, resulting in negative mental and physical health inequities and disparities.

5.3.4 Aim 3 Associations between Psychological Well-Being and Well-Woman

Visit Use

A summary of interview, survey, and integrated results for Aim 3 is listed in Table XXXIII. Quantitative and qualitative results both converged and diverged to reveal three main findings relating to the association between well-being and use of preventive care:

1. Regardless of women's degree of well-being, autonomous motivation alone does not appear to explain women's use of preventive services. Women's use of preventive services was motivated by both autonomous (intrinsic) and controlled (extrinsic) factors.
2. A higher sense of well-being was found to be associated with women's intentions to use preventive services, but not with their actual use of preventive services.
3. Fragmented care may negatively impact women's use of preventive services.

As mentioned earlier, self-determination theory posits that autonomous (or intrinsic) motivation is driven by factors that are aligned with inherent satisfaction or values and tends to yield greater psychological health and maintained change toward healthier behaviors (Deci & Ryan, 2008). Controlled (or extrinsic) motivation is driven by factors associated with achieving a separable consequence or characterized by attributes such as awards or fear (Deci & Ryan, 2008). It was theorized that *autonomous* motivation was in the causal pathway between PWB and use of preventive services, which was not found by survey results. However, interviews showed that women's motivations for use of preventive care were both autonomous and controlled. For example, some women were motivated to access preventive services by a desire to age well or wanted to be proactive in maintaining their health (autonomous).

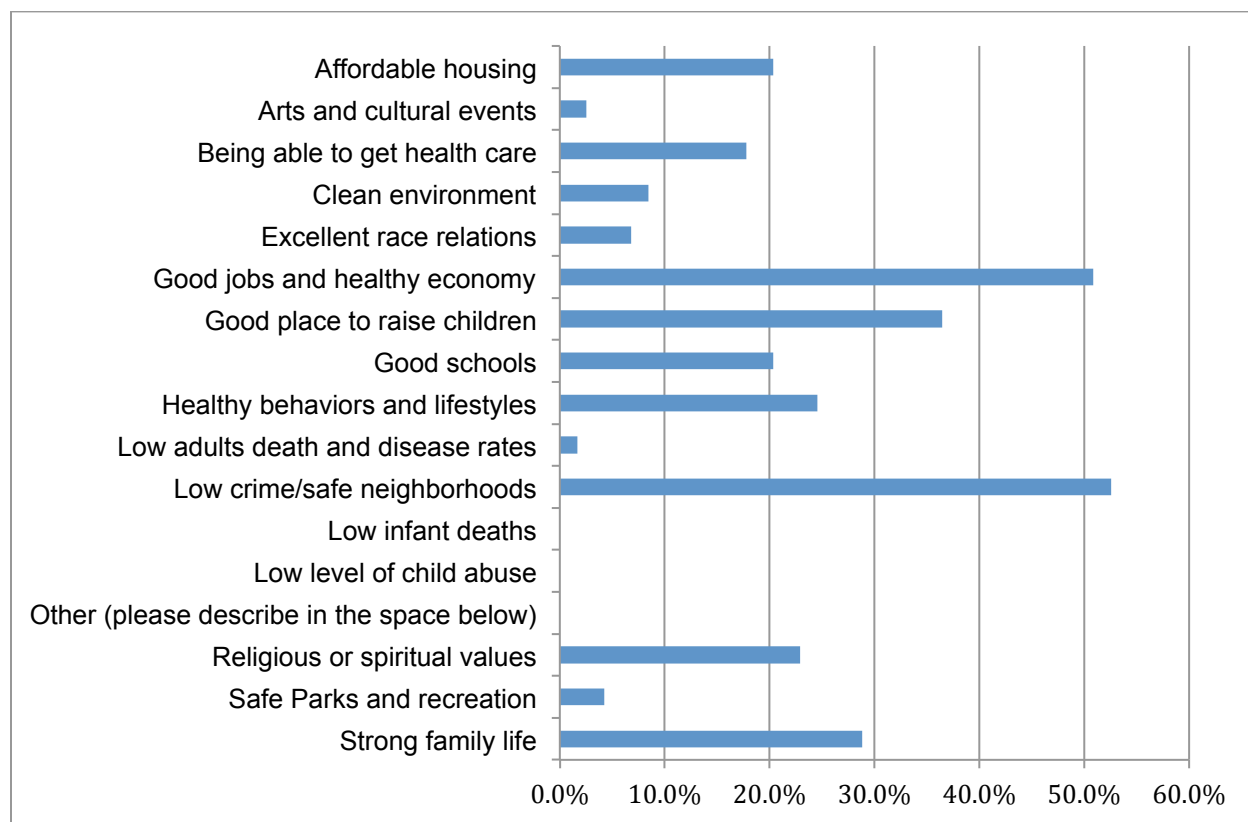


Figure 6. Women's most important factors for a healthy community.

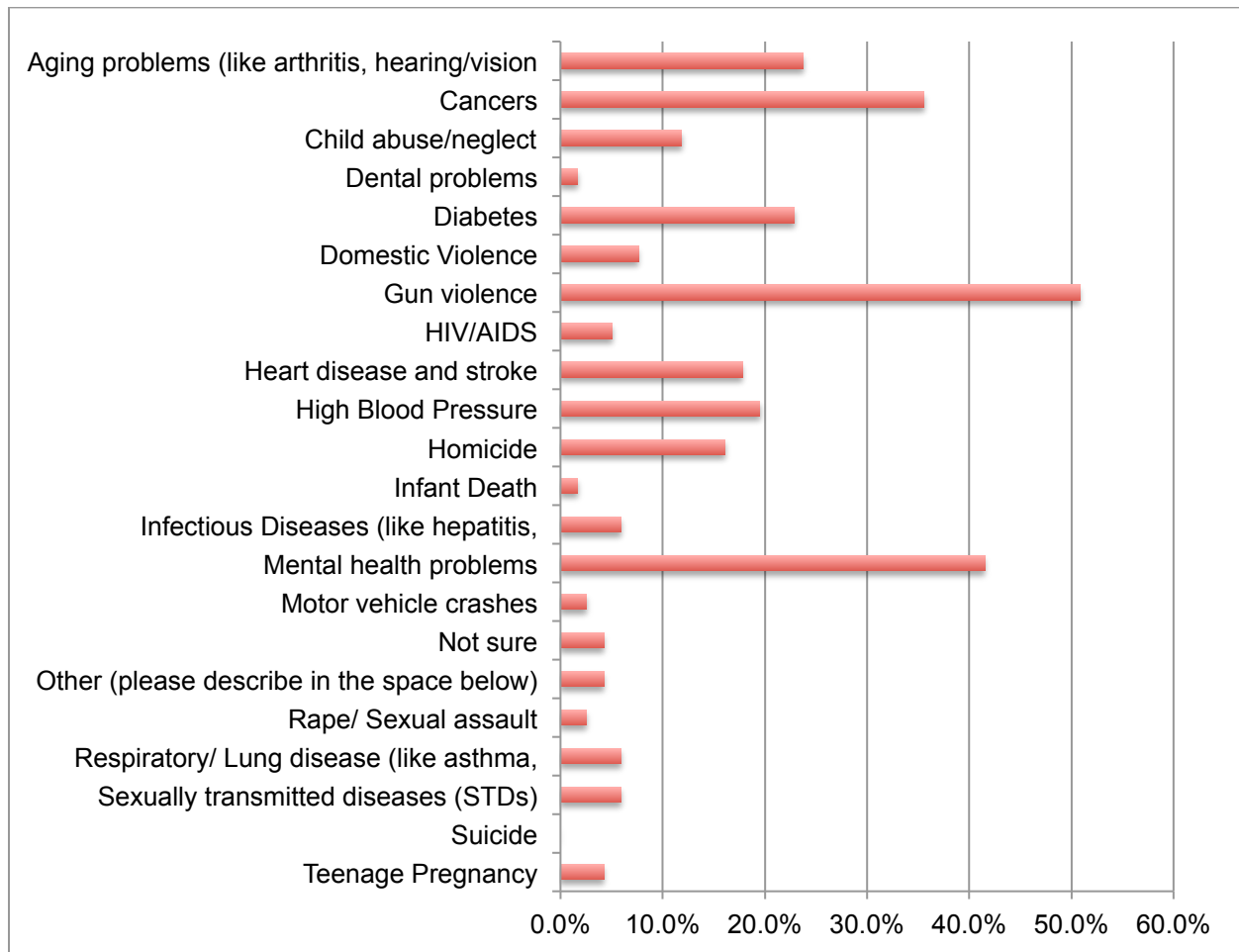


Figure 7. Women's most important health problems that impact their community.

Women were also motivated to access preventive care because they witnessed ill health of others or deaths due to late diagnoses of chronic conditions or cancers (controlled). When examining bivariate analyses between autonomous motivation and WWV, flu, and mammogram use, women with higher autonomous motivation had slightly higher odds of obtaining each service, although these relationships were not statistically significant. Further examination is needed to determine if autonomously motivated women access preventive care more regularly or in a more timely fashion than more extrinsically motivated women.

All women interviewed believed that emotional and mental health impacted their physical health and 17 out of the 19 women interviewed believed that women with a higher sense of well-being were more likely to access preventive care than women with a lesser sense of well-being. In contrast, slightly higher proportions of women surveyed with low PWB actually utilized preventive services than women with high PWB. This unexpected finding might result from the fact that in the interviews, women were asked prospectively and hypothetically about a woman's (not specifically herself, but any woman) intentions to use preventive care based on her well-being. It is possible that an unexamined factor or response bias could have also impacted women's beliefs about positive associations between PWB and preventive care use. Although the association is not statistically significant, women with high PWB had 3 times higher odds of anticipating obtaining a WWV within a year than women with low PWB, which corroborates the idea that women's intentions to use preventive care may not be aligned with actual use.

TABLE XXXIII
AIM 3 SUMMARY OF INTEGRATED RESULTS

Interview Theme	Summary of Survey Results	Integrated Results
Aim 3		
Construct 7: Factors that Motivate Use of Preventive Care		
All women felt that preventive care was important and were often motivated to use well-woman care due to: family history of certain conditions; desire for early detection of illness; witnessing death due to late diagnoses of illnesses; having their own chronic conditions; and the desire to age well.	<ul style="list-style-type: none"> Autonomous motivation did not mediate the relationship between PWB and use of preventive services 	Divergence – <ul style="list-style-type: none"> Women were motivated to use preventive services by both autonomous and controlled motivating factors
Construct 8: Relationship between Well-Being and Preventive Care Use		
Women believed that mental and emotional health can impact physical health and most women believed that a higher sense of well-being is associated with a higher likelihood of seeking preventive care.	<ul style="list-style-type: none"> Higher proportions of women with low PWB obtained flu vaccines and mammograms Women with high PWB had 3 times higher odds of anticipated WWV use Joint effect of being unmarried and high PWB resulted in lower odds of obtaining a flu vaccine Joint effect of having more than 1 or no PCP and high PWB resulted in lower odds of obtaining a mammogram 	Divergence & Convergence – <ul style="list-style-type: none"> Although women interviewed believed that higher PWB was associated with greater likelihood to use PC, survey results did not reflect this. However, higher PWB was associated with intention to use preventive services. Established relationships with providers facilitated women's likelihood of obtaining mammograms; fragmented care may negatively impact women's use of preventive services

The joint effect of having more than 1 or no primary care provider and high PWB resulted in statistically significant lower odds of obtaining a mammogram; and although not statistically significant, the joint effect of having 1 primary care provider and high PWB resulted in 4 times higher odds of obtaining a mammogram. During interviews, women consistently conveyed the importance of having established relationships with providers and many women stated that they utilized preventive services at the recommendation of their providers. It appears that fragmented healthcare may have a negative impact on women's use of recommended preventive services.

Finally, the joint effect of being unmarried and having high PWB resulted in 0.39 lower odds of obtaining a flu vaccine than married women with high PWB. This may perhaps be attributed to findings indicating that emotional support is associated with higher odds of obtaining preventive care; however, it cannot be assumed that unmarried women receive less emotional support than married women. In fact, bivariate regression analysis showed no differences between emotional support received based on marital status. Further exploration is needed to understand these results with a larger sample.

6. DISCUSSION

6.1 Women's Use of Clinical Preventive Services

This study sought to determine the relationship between psychological well-being and preventive care use among midlife African-American women. Although the nature of this research is exploratory and understanding phenomena was prioritized over generalizability, a comparison of social demographic characteristics of the study sample and 2015 U.S. census data of African-American women showed similarities with respect to marital status and education (U.S. Census Bureau, 2015).

Previous studies have assessed contextual factors that impact women's use of preventive care. Findings in this study corroborate previous findings and expand our understanding of midlife AAW's psychological well-being and experiences associated with utilizing preventive care. This current study builds upon earlier studies that showed continuity of care, accessibility of healthcare settings, access to female providers, knowledge of preventive services, and trust of providers were all associated with increased preventive care use (Matthews, 2015; O'Malley et al., 2004; Fowler, 2006). Additionally, a priori studies have shown that coordination of specialty care by one primary care provider to be strongly associated with high trust in PCPs and higher trust of PCPs to be significantly associated with greater use of recommended clinical preventive services (O'Malley et al., 2004). In this study, knowledge of recommended preventive services and their timeframes; positive, established, and trusting relationships with providers; access to female providers; and having only 1 primary care provider also greatly influenced women's use of preventive care.

6.1.1 Barriers to Use of Preventive Services

Women in this study reported few barriers; however, no surveyed woman who reported having barriers had obtained a WWV within the past year. Thus, barriers appear to be associated with a lack of preventive healthcare. Many women interviewed had past barriers with accessing care usually related to costs, insurance, and mistrust of providers. Other barriers discussed were putting home care clients' and others' needs before their own, fear of visit results or the content of visit, and prioritizing other demands over obtaining care. These findings corroborate previous research that found that factors such as health beliefs, inability to take off time from work, lack of awareness of preventive care recommendations, poor patient-provider relationships, and lack of health insurance or out-of-pocket costs have also been major barriers to preventive care seeking (Multack, 2013; National Commission on Prevention Priorities, 2007).

Earlier studies have also shown that in addition to mistrust of the medical system and providers, discrimination is also a barrier to seeking and utilizing preventive services amongst midlife AAW (Gatchell, 2012; McKenzie & Skelly, 2010; O'Malley et al., 2004). During interviews, racism was a sometimes subtle, yet consistent construct discussed in women's experiences with structural factors in the healthcare system (e.g., lower quality healthcare facilities in low-income and African-American communities); personal factors in the healthcare system (e.g., mistreatment/abuse by providers); and PWB (e.g., criminal injustice perpetuated by negating crimes of white sexual offenders of AAW). This finding supports previous literature that has found associations between racism/discrimination and well-being, and racism and the use of preventive care (Yang, 2015; see Williams & Mohammed, 2009 for review).

Perpetuating the image of the “strong Black woman” (SBW) was also found to be a barrier to using preventive care in previous studies. The archetype of the SBW is defined as “a cultural ideal that reflects an expectation that black women be selfless, self-reliant, psychologically and physically strong, and resilient despite the main social challenges (sexism, racism) they encounter” (Baker et al., 2015, p. 52; Beauboeuf-Lafontant, 2003). Black & Woods-Giscombe (2012) explored the links between the SBW archetype and reactions to stressors. They found that extraordinary caregiving was a manifestation of the SBW role as a coping mechanism and that extraordinary caregiving may result in women delaying scheduling or obtaining mammograms. Although the concept of the SBW was not emphatically articulated during interviews in this present study, it was clear that bearing responsibility for others’ mental and physical well-being to the detriment of women’s own health and well-being was a factor that hindered some women’s use of preventive care. This is further complicated by the idea that although women’s roles as caregivers to children, clients, and elderly parents may contribute to self-neglect, as well as anxiety and stress, caregiving and helping others also serve as sources of intrinsic reward and purpose for women. As in previous studies, it appeared that for women in this study, the SBW role was a coping and survival mechanism in the face of racial, gender, and socioeconomic discrimination and inequities.

6.1.2 Facilitators of Preventive Services Use

One study that specifically examined the association between purpose in life and clinical preventive service use found that purpose in life was associated with higher likelihood of obtaining a mammogram (Kim et al., 2014). The aforementioned study looked at only one dimension of Ryff’s scales of PWB. Findings in the current study

differed in that overall PWB and specific preventive services were examined; no other studies have been found that examined the association between these constructs. In the current study, high PWB was not associated with actual use of preventive care services, but is associated with intention to use preventive care services.

Women in this study had relatively high utilization of WWVs and mammograms, although still below Healthy People 2020 targets. One of the most salient factors that also facilitated women's use of preventive care was the fact that this sample of women was highly insured. As discussed earlier, these women were unique in that they belonged to a labor union that offered healthcare plans to its members. Additionally, a number of women had insurance through the Illinois Exchange Marketplace or through the Medicaid expansion. A study by O'Neal et al. (2014) examined the associations between having health insurance with two psychological processes: psychological competency (positive feelings and thoughts about life circumstances) and psychological vulnerability (depressed feelings) among older African-Americans. They found that having health insurance increased the likelihood of getting regular preventive care in individuals with low psychological competency and high psychological vulnerability. This finding may help to explain why there was no significant association between high PWB and increased use of preventive services found in this study. Although health insurance was not found to be an effect modifier of the relationship between high PWB and preventive services use, it is possible that joint effects are operative and could have been detected with a larger sample size. In this study, only 5.6% of women were uninsured.

This study also builds upon previous literature that demonstrated the impact of knowledge on preventive service use. In a study that examined women's breast cancer knowledge, Walther (2014) found that among a sample of 291 women, including healthcare providers, many women felt they were not at risk for breast cancer, yet had 1 to 9 risk factors. Matthews (2015) also showed that AAWs use of cervical cancer screening was affected by knowledge of the purpose of the screening, having a female examiner, and encouragement of family and friends. This study also demonstrated that health literacy significantly impacted use of preventive services. It should be noted that this study included women who were current or former home care aides and it is quite plausible that these women had more knowledge and interaction with the healthcare system due to the nature of their work, which afforded them higher knowledge of preventive services than perhaps the general population of women with similar social demographic characteristics.

6.2 Women's Psychological Well-Being: The Intersection between Community Violence, Stress, and Spirituality as a Coping Mechanism

One of the most profound findings from this study is the role that community violence played in women's daily experiences of stress and anxiety and how this impacted their well-being. This was found in both quantitative and qualitative data. Despite the decrease in crime and media tendencies to sensationalize crime in Chicago, community violence was indeed a daily physical and mental threat for the large majority of women interviewed. Additionally, survey data also revealed that gun violence was a major threat to the health and well-being in women's communities.

An extensive study conducted by the University of Illinois Institute for Research

on Race and Public Policy (2017) helps to shed light on crime and racial inequities in Chicago. The majority of violent crime occurs in the South and West sides of Chicago. These areas consist of predominantly African-American communities and have the highest death rates in the city. Among African-Americans, homicide is the 5th leading cause of death in Chicago. Further, most doctors are located in neighborhoods that are occupied by mostly White residents, resulting in healthcare provider deserts in the South and West sides of Chicago. Large scale racial segregation, health inequalities, income gaps, and education disparities amass to promulgate significant racial and socioeconomic disparities in Chicago, where African-Americans and Latinos fare much worse than Whites in all of these structural arenas (Institute for Research on Race and Public Policy, 2017). Below (Figure 8 and Figure 9) is a Chicago crime map juxtaposed with a map that shows areas where women interviewed in this study resided (outlined in blue), indicating that most women interviewed lived in high crime areas.

There is extensive literature that examines cumulative stress and allostatic load in AAW and their negative effects on morbidity and mortality (Pascoe & Richman, 2009; Geronimus et al., 2006). Much fewer studies have examined community violence, specifically, and its impact on AAW's health. One study examined the association between community violence and asthma-related health outcomes in a sample that was 70% African-American. Apter et al. (2010) found that exposure to community violence was associated with increased asthma-related hospitalizations and emergency care. No studies were found that directly examined the association between community violence and preventive care use. Most studies that explored the impact of

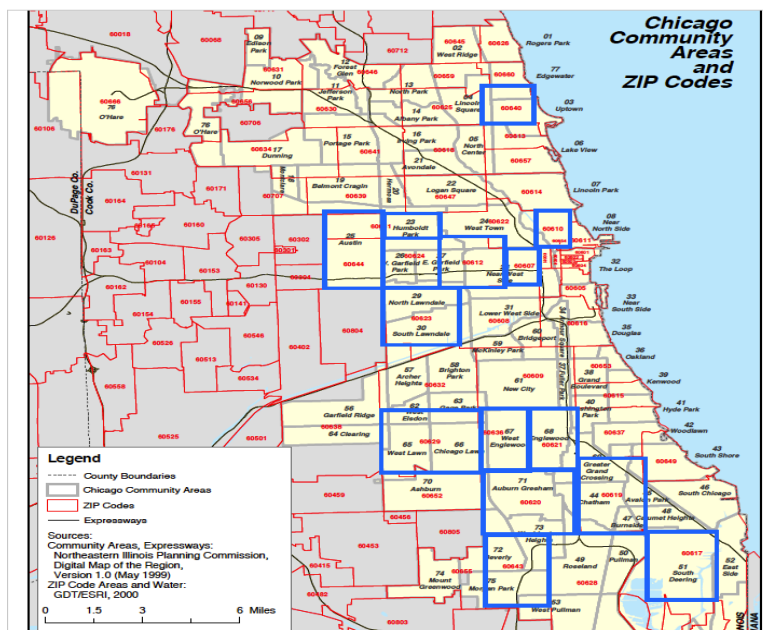


Figure 8. Areas where interviewed women resided.

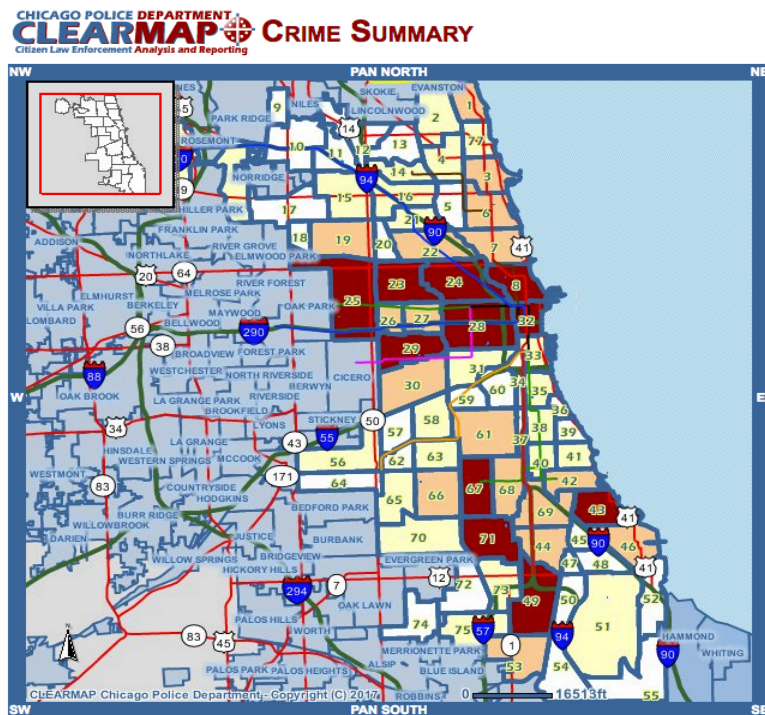


Figure 9. Chicago crime map (2017), red shaded areas highest in crime.

community violence on AAW's lives assessed women's coping mechanisms used to deal with community violence rather than the direct relationship between community violence and health outcomes or health seeking behaviors.

The current study also shed light on how women cope with stress in their lives, such as community violence, in order to maintain their well-being. Interviews revealed that spirituality was a factor that contributed to women's well-being in that it was used as a coping mechanism in dealing with difficulties and challenges. In fact, women interviewed seemed to employ spirituality to deal with some stressors and positive reframing (or cognitive reinterpretation) for other stressors. Both of these coping mechanisms are thought to be associated with positive psychological states and may be thought of as forms of approach coping (described below). However, some studies show that spirituality may also be associated with avoidant coping, where an individual may surrender control of their health to a higher power rather than having an internal locus of control (McKenzie & Skelly, 2010).

Coping is widely classified as either avoidant coping (ignoring or escaping the threat) or approach coping (turning toward a stressful situation). Approach coping can take three forms: active (direct action to deal with stressor); acceptance (acknowledging stressful realities emotionally and cognitively); and, cognitive reinterpretation (learning from or finding the good in the stressor) (Roth & Cohen, 1986; Weinstein et al., 2009; Chappell & Dujela, 2009). Examples of avoidant coping include: drug use, humor, and behavioral disengagement (Lopez et al., 2005). Approach coping has been demonstrated to help individuals transcend stressful situations and to enhance well-being. Avoidant coping can be useful short-term, but is ineffective in supporting well-

being (Weinstein et al., 2009). Engaged, or approach, forms of coping have also been shown to be associated with better health prognosis, whereas avoidant coping strategies are associated with worse health prognosis (Billings et al., 2000). In the current study, approach coping in the form of spiritual beliefs and practices and positive reframing appeared to help women manage acute and chronic stressors.

The link between spiritual coping mechanisms and stress resultant from community violence and trauma was found in a few earlier studies. Bryant-Davis (2005) found spirituality to be a significant coping strategy and protective factor for AAW who were trauma survivors. Along the same vein, Mattis (2002) found that religious and spiritual beliefs facilitate personal growth, finding purpose in life, as well as finding meaning in life challenges (Stevens-Watkins et al., 2014). Hill et al. (1995) investigated coping strategies employed by African-American mothers who were exposed to community violence. They suggested that AAW who live in high crime areas are exposed to a cumulative triple threat due to: 1) exposure through daily living due to unpredictable community violence; 2) exposure from witnessing neighborhood violence; and, 3) exposure from personal victimization. They found that among women who were college educated and had comparable incomes, women who lived in lower violence areas preferred activism as a coping strategy and women who lived in higher crime areas preferred reliance on prayer and safety practices as coping mechanisms. Another study conducted with low-income, urban dwelling AAW who were also caregivers, found witnessing violence to be associated with changes in avoidant coping and in turn, avoidant coping was associated with higher levels of problematic drug use (Kliewer & Zaharakis, 2013). The aforementioned study also showed that religious commitment

and social support were associated with lower levels of avoidant coping. Examining spirituality as a coping mechanism for stress sheds light on the role and importance that spirituality played in the lives of women interviewed in this current study. It is suspected that contradictory findings between the quantitative and qualitative results are related to deficits in the questions asked. The association between spirituality and preventive care warrant further investigation with a larger sample size. Additionally, more research is needed to more deeply understand the relationship between community violence and preventive care use.

7. LIMITATIONS

This study had several limitations. One was the survey drop-out rate. Of the 181 women who consented to participate in the survey, only 124 women (68.9%) completed 60% or more of the survey. Completion rates dropped off toward the end of the survey, indicating that perhaps the survey was too long for participants. It is not known how this selection bias may have affected study results. It is possible that women who perceived lower levels of well-being did not participate. The survey was pilot tested with 3 AAW who were between the ages of 45 and 50; however, they were not members of SEIU HCII. Pilot testing with women who met all of the inclusion criteria may have helped to deter drop-out rates. Alternatively, conducting and analyzing the interviews first (exploratory mixed methods design) may have helped to refine study variables included in the survey, thereby helping to streamline the survey and potentially shortening it.

Another limitation was a low survey response rate. Although over 4000 recruitment emails were sent, only a very small percentage of women consented to participate in the survey. Two waves of survey invitations were sent to increase response rates, both offering incentives for participation, but response rates still remained low. Additionally, it was not clear how accurate email addresses were, although every effort was made to obtain the most current information of eligible participants by SEIU HCII. While, SEIU HCII has approximately 75,000 members (extending beyond Illinois), they only have email addresses for approximately 30% of them; in addition, emails were only sent to members residing in Cook County. It was not clear to what extent women who did not provide email addresses or did not have access to the survey differed from the survey respondents, as SEIU HCII collects limited social

demographic data and could not provide this information. Finally, an increased sample size would have helped to increase power in analyses and aid in ensuring more stable and reliable findings.

This was a cross-sectional study. As such, the direction of relationships is not known. Additionally, PWB was dichotomized in Aim 2 and Aim 3 and this study may not have had sufficient power to detect differences in PWB using it as a dichotomized variable with the median as the cut point. Keeping PWB as a continuous variable or using a difference cut-point might increase power and enable greater detection of differences in PWB. Additional analyses, using PWB as a continuous variable for Aim 2 and Aim 3, will be conducted prior to publication.

Although validated instrumentation lends credence to study findings, there is potential that the wording used in certain survey items was difficult to understand or rendered different meanings to different people. Care was taken to make the most minimal changes in instrument item wording from validated survey questions if needed, in order to maintain scientific rigor, but to also maintain comprehensibility and cultural relevance. Piloting the survey with women who met all inclusion criteria could have helped to address this concern. Additionally, during the quantitative analysis, it was detected that 3 survey questions were faulty with respect to obtaining the intended information (questions and question wording did not accurately measure intended variable). These questions were omitted from further data analysis.

Although having an interviewer who is similar (in age, race, and gender) to the sample being interviewed is often regarded as a strength in qualitative research, it is possible that being interviewed by a person of similar age, race, and gender may

influence participants' responses such that women provide what they perceive to be more socially desirable responses. Interestingly, the SEIU HCII chief of staff was also concerned, based on her experience with this population, that women interviewed would paint a "rosy" picture of their lives and experiences, thereby potentially misrepresenting the complete realities of their lives. In order to address these potential biases, every effort was made to refine how questions were asked during interviews, to explain the goals and intent of the research to each participant, and to establish a feeling of trust with participants. Most participants expressed how much they enjoyed the interview, and it appeared that many women appreciated the opportunity to share and reflect on their experiences and feelings. Many women shared personal and painful accounts and it did not appear that women over-reported positive attributes of their lives.

Percent agreement to assess intercoder reliability was not employed for this study. The purpose of intercoder reliability testing is to assure that when more than one coder is involved in coding qualitative data, codes are applied and interpreted consistently amongst coders. Although percent agreement was not calculated, reliability and validity were maximized by: 1) two analysts reading and memoing transcripts in preparation for codebook development and discussing relevance and appropriateness of codes, code families, and code applications; 2) discussing findings and interpretations with other researchers; 3) sharing detailed descriptions of instrument design, instrument refinement, data collection, and data analysis; 4) developing data summaries by code that strictly reported information shared by participants void of any interpretation first and sharing those results, allowing readers access to "raw" data; 5) and, triangulating quantitative and qualitative results.

8. CONCLUSIONS AND IMPLICATIONS FOR FUTURE RESEARCH

This mixed methods study adds to the small body of literature that explores contextual factors that impact midlife AAW's use of preventive care services, and an even smaller body of literature that examines the association between psychological well-being and preventive care use. Findings were similar to previous literature indicating that more knowledge about preventive care is associated with greater use of preventive care and that positive provider relationships and communication, as well as access to health insurance, also facilitate women's use of preventive care. Women in this study had few current barriers, but those with barriers had lower rates of preventive care use. Flu vaccination was the least utilized preventive service, resulting from several misperceptions regarding the vaccine and its effects.

Emotional support, having positive relationships with others, and helping others were associated with high PWB. Although overall PWB was not shown to have a direct impact on past use of preventive services, it was shown to have a positive impact on women's intentions to use well-woman visits. This suggests that interventions should focus on behavior change and not intention. Good intentions were not associated with actual health care use. These findings imply that interventions aimed at increasing timely use of preventive services might consider community level approaches to increase AAW's knowledge about health conditions and the importance of preventive care and debunk misperceptions about the effect of preventive care services, while generating emotional and social support for women.

One unexpected finding was the prevalence of women's experiences of trauma, particularly community violence, which appeared to have implications for women's

health and well-being. Violence in communities is a public health problem in Chicago that greatly contributes to affected women's experiences of stress and threatens their overall sense of well-being; this stress has negative impacts on mental and physical health. Spirituality, in its many forms, played a major role in AAWs' abilities to cope with stressors, and intervention strategies, such as meditation and yoga may also help women cope with stress and maintain well-being.

The National Academy of Medicine calls for the provision of care related to "violence-related post traumatic stress disorder" during WWVs. Well-woman visits may offer a prime opportunity to provide stress reduction therapy or refer women to trauma-informed follow-up care, in order to improve AAWs' health outcomes. Further, healthcare policies that support the provision of trauma-informed care and quality mental health care for underserved individuals, as well as policies that promote an increase of quality healthcare providers and clinics in low-income areas are essential. Additionally, more research is needed to understand the health implications and outcomes from experiences of community violence. Policy and research must be driven from a framework that distinguishes between social causes of health, the factors that determine how these causes are distributed to more or less advantaged groups, and how these factors continue to promote or impede inequities (World Health Organization, 2010).

Based on study results, the following intervention strategies may increase timely use of preventive services and improve health outcomes:

1. Increase health literacy and debunk misperception about preventive services with social media campaigns that are socially and culturally relevant, utilizing images of “like” others.
2. Increase health literacy and facilitate patient-provider encounters by developing interventions that provide women with tools to ask questions and garner information from their providers during visits.
3. Develop exploratory and intervention studies that specifically focus on the impact of community violence on health seeking behaviors and clinical outcomes of AAW in communities with a high prevalence of violence.
4. Develop interventions that examine intersections of genetics and use of preventive services to understand disproportionate morbidity and mortality from cancers despite increased screening rates.

This study is important because AAW continue to experience a disproportionate prevalence of negative health outcomes and studies that explore unexamined factors that may decrease these disparities are needed. This study examined preventive care use using a strengths-based paradigm. The disproportionate burden of poor health outcomes that African-Americans bear, compared to other racial and ethnic groups in the U.S., results from centuries of systematic discrimination and oppression. Although these realities must be faced in order to enact change, it is important to examine factors that have allowed African-Americans to survive, persist, and prevail in spite of structural barriers. In other words, health researchers must explore the factors that work, and not just the factors that do not work, to improve health outcomes and health behaviors of

African-Americans. This study focused on health aspects of positive functioning in an attempt to understand how these factors may impact preventive care use of AAW.

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APPENDICES

APPENDIX A
QUANTITATIVE SURVEY

All questions will include a Don't Know response category as well.

This survey will take approximately 30 minutes to complete. Please answer the following questions. There are no right or wrong answers. We are only interested in your personal thoughts and experiences.

1. What is your age? _____
2. What is your sex?
 - ☐ Female
 - ☐ Male
3. What is your zip code? _____
4. What best describes your race/ethnicity? Choose all that apply.
 - ☐ American Indian/Alaska Native
 - ☐ Asian
 - ☐ Black or African American
 - ☐ Hispanic or Latino
 - ☐ Native Hawaiian or Other Pacific Islander
 - ☐ White

Participants who do not meet study eligibility criteria will receive the following question and no matter their response, will be told that they are not eligible to participate in survey: Do you currently smoke tobacco on a daily basis, less than daily, or not at all?

- ☐ **Daily**
- ☐ **Less than daily**
- ☐ **Not at all**
- ☐ **Don't know**

5. What is your marital status?
 - ☐ Married
 - ☐ Never married
 - ☐ Divorced
 - ☐ Widowed
 - ☐ Separated

APPENDIX A (continued)

6. How many children less than 18 years of age live in your household? _____
7. What is your highest grade or year of school you completed?
- ☐ Never attended school
 - ☐ Grades 1 through 8 (Elementary)
 - ☐ Grades 9 through 11 (Some high school)
 - ☐ Grade 12 or GED (High school graduate)
 - ☐ College 1 year to 3 years (Some college or technical school)
 - ☐ College 4 years or more (College graduate)
8. Households are sometimes grouped according to income. Please select your yearly household income before taxes.
- ☐ Less than \$10,000
 - ☐ \$10,000 to \$19,999
 - ☐ \$20,000 to \$29,999
 - ☐ \$30,000 to \$39,999
 - ☐ \$40,000 to \$49,999
 - ☐ \$50,000 to \$74,99
 - ☐ \$75,000 or more

APPENDIX A (continued)

9. The following sets of questions deals with how you feel about yourself and your life. Please circle the number that best represents how much you agree or disagree with each statement. Remember that there are no right or wrong answers.

	Strongly Agree	Agree Somewhat	Agree Slightly	Disagree Slightly	Disagree Somewhat	Strongly Disagree
1. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.	6	5	4	3	2	1
2. In general, I feel I am in charge of the situation in which I live.	6	5	4	3	2	1
3. I am not interested in activities that will expand my horizons.	6	5	4	3	2	1
4. Most people see me as loving and affectionate.	6	5	4	3	2	1
5. I live life one day at a time and don't really think about the future.	6	5	4	3	2	1
6. When I look at the story of my life, I am pleased with how things have turned out.	6	5	4	3	2	1
7. My decisions are not usually influenced by what everyone else is doing.	6	5	4	3	2	1

	Strongly Agree	Agree Somewhat	Agree Slightly	Disagree Slightly	Disagree Somewhat	Strongly Disagree
8. The demands of everyday life often get me down.	6	5	4	3	2	1
9. I think it is important to have new experiences that challenge how you think about yourself and the world.	6	5	4	3	2	1
10. Maintaining close relationships has been difficult and frustrating for me.	6	5	4	3	2	1
11. I have a sense of direction and purpose in life.	6	5	4	3	2	1
12. In general, I feel confident and positive about myself.	6	5	4	3	2	1
13. I tend to worry about what other people think of me.	6	5	4	3	2	1
14. I do not fit very well with the people and the community around me.	6	5	4	3	2	1

APPENDIX A (continued)

	Strongly Agree	Agree Somewhat	Agree Slightly	Disagree Slightly	Disagree Somewhat	Strongly Disagree
15. When I think about it, I haven't really improved much as a person over the years.	6	5	4	3	2	1
16. I often feel lonely because I have few close friends with whom to share my concerns.	6	5	4	3	2	1
17. My daily activities often seem trivial and unimportant to me.	6	5	4	3	2	1
18. I feel like many of the people I know have gotten more out of life than I have.	6	5	4	3	2	1
19. I tend to be influenced by people with strong opinions.	6	5	4	3	2	1
20. I am quite good at managing the many responsibilities of my daily life.	6	5	4	3	2	1
21. I have the sense that I have developed a lot as a person over time.	6	5	4	3	2	1

	Strongly Agree	Agree Somewhat	Agree Slightly	Disagree Slightly	Disagree Somewhat	Strongly Disagree
22. I enjoy personal and mutual conversations with family members or friends.	6	5	4	3	2	1
23. I don't have a good sense of what it is I'm trying to accomplish in life.	6	5	4	3	2	1
24. I like most aspects of my personality.	6	5	4	3	2	1
25. I have confidence in my opinions, even if they are contrary to the general consensus.	6	5	4	3	2	1
26. I often feel overwhelmed by my responsibilities.	6	5	4	3	2	1
27. I do not enjoy being in new situations that require me to change my old familiar ways of doing things.	6	5	4	3	2	1
28. People would describe me as a giving person, willing to share my time with others.	6	5	4	3	2	1

APPENDIX A (continued)

	Strongly Agree	Agree Somewhat	Agree Slightly	Disagree Slightly	Disagree Somewhat	Strongly Disagree
29. I enjoy making plans for the future and working to make them a reality.	6	5	4	3	2	1
30. In many ways, I feel disappointed about my achievements in life.	6	5	4	3	2	1
31. It's difficult for me to voice my own opinions on controversial	6	5	4	3	2	1
32. I have difficulty arranging my life in a way that is satisfying to me.	6	5	4	3	2	1
33. For me, life has been a continuous process of learning, changing, and growth.	6	5	4	3	2	1
34. I have not experienced many warm and trusting relationships with others.	6	5	4	3	2	1
35. Some people wander aimlessly through life, but I am not one of them.	6	5	4	3	2	1

	Strongly Agree	Agree Somewhat	Agree Slightly	Disagree Slightly	Disagree Somewhat	Strongly Disagree
36. My attitude about myself is probably not as positive as most people feel about themselves.	6	5	4	3	2	1
37. I judge myself by what I think is important, not by the values of what others think is important.	6	5	4	3	2	1
38. I have been able to build a home and a lifestyle for myself that is much to my liking.	6	5	4	3	2	1
39. I gave up trying to make big improvements or changes in my life a long time ago.	6	5	4	3	2	1
40. I know that I can trust my friends, and they know they can trust me.	6	5	4	3	2	1
41. I sometimes feel as if I've done all there is to do in life.	6	5	4	3	2	1
42. When I compare myself to friends and acquaintances, it makes me feel good about who I am.	6	5	4	3	2	1

APPENDIX A (continued)

10. Would you say that in general your health is:

- ☐ Excellent
- ☐ Very Good
- ☐ Good
- ☐ Fair
- ☐ Poor

11. The following questions are about your use of services that prevent women from becoming sick.

	YES	NO
1. During the <u>past 12 months</u> , have you had your blood pressure checked by a doctor, nurse, or health provider?	1	2
2. Blood cholesterol is a fatty substance found in the blood. During the <u>past 12 months</u> , have you had your blood cholesterol checked?	1	2
3. During the <u>past 12 months</u> , have you had a test for high blood sugar or diabetes?	1	2
4. Have you <u>ever</u> been tested for HIV? Do not count tests you may have had as part of a blood donation. Include testing fluid from your mouth.	1	2

	YES	NO
5. During the <u>past 12 months</u> , have you had either a flu shot or a flu vaccine that was sprayed in your nose?	1	2
6. A pneumonia shot or pneumococcal vaccine is usually given only once or twice in a person's lifetime and is different from the flu shot. Have you <u>ever</u> had a pneumonia shot?	1	2

	YES	NO
7. A mammogram is an x-ray of each breast to look for breast cancer. Have you had a mammogram during the <u>past 2 years</u> ?	1	2
8. A Pap smear is a test for cancer of the cervix. Have you had a Pap smear within the <u>past 3 years</u> ?	1	2
9. A blood stool test is a test that may use a special kit at home to determine whether the stool contains blood. During the <u>past 12 months</u> , have you ever had this test using a home kit?	1	2

APPENDIX A (continued)

12. In the past 12 months, has a doctor or nurse ever started a conversation with you about:

	YES	NO	I haven't seen a provider in the past 12 months
A Well-Woman Visit?	1	2	3
Your eating habits?	1	2	3
Your body weight?	1	2	3
Your smoking habits?	1	2	3
Your use of alcohol?	1	2	3
Your mood or how you feel emotionally?	1	2	3
Your blood cholesterol level?	1	2	3
Your blood sugar level?	1	2	3
The need for a flu shot?	1	2	3
The need for a Pap smear?	1	2	3
The need for a mammogram?	1	2	3
The need for a blood stool test?	1	2	3

The following questions are about your ability to get health services.

13. What type(s) of health insurance or coverage do you have? Choose all that apply.

- ☐ An insurance plan through your job
- ☐ An insurance plan through someone else's job (like a spouse)
- ☐ A plan that you or someone else buys on your own
- ☐ Medicaid
- ☐ Medicare
- ☐ Obamacare (marketplace insurance)
- ☐ Military or veterans benefits
- ☐ I don't have health insurance

14. Do you have one person or place you think of as your personal doctor or health care provider?

- ☐ Yes, only one
- ☐ More than one
- ☐ No

APPENDIX A (continued)

15. If YES to question 12, What kind of person or place is this?

- ☐ A community or hospital clinic or group practice where I see the same person each time
- ☐ A community or hospital clinic or group practice where I see a different person each time
- ☐ A private doctor's office where I see the same person each time
- ☐ A private doctor's office where I see a different person each time
- ☐ An emergency department of a hospital
- ☐ A local health department
- ☐ Other _____

Preventive Care is when you see a doctor even when you are not sick for services that prevent you from becoming sick. Things like routine checkups, physical exams, mammograms, Pap smears, flu shots, and talking with your health care provider about issues you are concerned about are examples of preventive care.

A Well-Woman Visit is when a woman sees a health care provider for preventive care. It is suggested that women get a Well-Woman Visit at least once a year. Some women call a Well-Woman Visit a "Yearly Visit."

16. Were you familiar with the term "Well-Woman Visit" before today?

- ☐ Yes
- ☐ No

17. About how long has it been since you last visited a doctor for a Well-Woman Visit or preventive care?

- ☐ Within the past year (anytime less than 12 months ago)
- ☐ Within the past 2 years (more than 1 year, but less than 2 years ago)
- ☐ Within the past 5 years (more than 2 years, but less than 5 years ago)
- ☐ Never

18. When is the next time you plan on attending a Well-Woman Visit (or a yearly checkup, screening, or vaccine, etc.)?

- ☐ Within the next six months
- ☐ Between six months to a year
- ☐ More than a year from now

APPENDIX A (continued)

19. Have you put off getting preventive care for any of the following reasons in the past 12 months?

	YES	NO
a. You couldn't get through on the telephone.	1	2
b. You couldn't get an appointment soon enough.	1	2
c. Once you got to doctor's office, you had to wait too long to see the doctor/nurse.	1	2
d. The clinic/doctor's office wasn't open when you got there.	1	2
e. You didn't have transportation.	1	2
f. You couldn't go because of costs.	1	2
g. You had no one to care for your child or children.	1	2
h. You couldn't take time off from work or school.	1	2
i. You're usually too busy to go to the doctor when you are not sick.	1	2
j. You kept forgetting.	1	2

	YES	NO
k. You did not know where to go to get health screenings or vaccines.	1	2
l. You were confused about which health screenings to get.	1	2
m. You did not have a regular doctor.	1	2
n. It costs too much to get health screenings and shots.	1	2
o. You did not have health insurance.	1	2
p. It takes too much time to get preventive care.	1	2
q. Preventive care is not that important to me.	1	2
r. You were afraid to get vaccines or screenings.	1	2
s. Shots and screening tests are too unpleasant.	1	2
t. Shots and screening tests are not located in a convenient place.	1	2
u. Other reason:		

20. Please look at the answers you circled for question 17. Of all the reasons you chose, please rank the TOP 3 reasons you put off getting preventive care by putting the letter next to each answer choice in the blanks below.

_____ First most important reason you put off getting preventive care

_____ Second most important reason you put off getting preventive care

_____ Third most important reason you put off getting preventive care

APPENDIX A (continued)

21. Following is a list of different people and organizations that might influence women's decisions about getting shots or health screenings. Would getting information from the following people or organizations help you decide to get preventive care?

	YES	NO
1. Your health insurance company	1	2
2. Health websites	1	2
3. A pharmacist	1	2
4. Your doctor or nurse	1	2
5. Your employer	1	2
6. Local health department	1	2
7. Friends or family members	1	2
8. A company that makes drugs	1	2
9. Movie theater advertisements	1	2
10. TV or radio commercials	1	2
11. Health-related pamphlets or brochures	1	2
12. Health-related magazines or books	1	2

22. Do you feel that your spiritual beliefs impact your desire to seek preventive care?

☐ Yes

☐ No

23. Do you feel that your spiritual beliefs impact your sense of well-being?

☐ Yes

☐ No

24. How likely is it that you will schedule a Well-Woman Visit (or a visit to get a checkup, screening, or vaccine) over the NEXT 12 months?

☐ Very likely

☐ Somewhat likely

☐ Not at all likely

☐ I already have a visit scheduled

APPENDIX A (continued)

25. How often do you think a woman should have a:

	Never	At least once a year	Every 2 years	Every 3 years	Less often than every 3 years
Well-Woman Visit?	1	2	3	4	5
Blood cholesterol level check?	1	2	3	4	5
Blood sugar level check?	1	2	3	4	5
Blood pressure level check?	1	2	3	4	5
Flu vaccine?	1	2	3	4	5
Pap smear?	1	2	3	4	5
Mammogram?	1	2	3	4	5
Blood stool test?	1	2	3	4	5

26. Do you plan to have the following tests in the NEXT 12 MONTHS?

	YES	NO
1. Blood pressure checked	1	2
2. Blood cholesterol checked	1	2
3. Blood sugar checked	1	2
4. HIV test	1	2
5. Flu vaccine	1	2
6. Mammogram	1	2
7. Pap smear	1	2
8. Blood stool test	1	2

27. Do you plan to get a pneumonia vaccine ever?

☐ Yes

☐ No

APPENDIX A (continued)

28. The following question relates to the reasons why you would either start getting preventive care services (like getting a yearly check-up, regular screenings, vaccines) or continue to do so. Different people have different reasons for getting preventive care, and we want to know how true each of the following reasons is for you.

On a scale from 1 to 7, where 1 is not at all true and 7 is very true, how true is each reason for you?

Not at all true				Somewhat true			Very true
1	2	3	4	5	6	7	

The reason I would get preventive services is:

1. Because I feel that I want to take responsibility for my own health.
2. Because I would feel guilty or ashamed of myself if I did not seek preventive care.
3. Because I personally believe it is the best thing for my health.
4. Because others would be upset with me if I did not.
5. I really don't think about it.
6. Because I have carefully thought about it and believe it is very important for many aspects of my life.
7. Because I would feel bad about myself if I did not get preventive care.
8. Because it is an important choice I really want to make.
9. Because I feel pressure from others to do so.
10. Because it is easier to do what I am told than think about it.
11. Because it is consistent with my life goals.
12. Because I want others to approve of me.
13. Because it is very important for being as healthy as possible.
14. Because I want others to see I can do it.
15. I don't really know why.

APPENDIX A (continued)

The next few questions are about race.

29. How often do you think about your race?

- ☐ Never
- ☐ Once a year
- ☐ Once a month
- ☐ Once a week
- ☐ Once a day
- ☐ Once an hour
- ☐ Constantly

30. Within the past 12 months, do you feel you were treated worse than, the same as, or better than people of other races?

- ☐ Worse than other races
- ☐ The same as other races
- ☐ Better than other races

31. Within the past 12 months, when seeking health care, do you feel your experiences were worse than, the same as, or better than people of other races?

- ☐ Worse than other races
- ☐ The same as other races
- ☐ Better than other races

32. Within the past 30 days, have you experienced any physical symptoms, for example, a headache, an upset stomach, tensing of your muscles, or a pounding heart, as a result of how you were treated based on your race?

- ☐ Yes
- ☐ No

33. Within the past 30 days, have you felt emotionally upset, for example angry, sad, or frustrated, as a result of how you were treated based on your race?

- ☐ Yes
- ☐ No

APPENDIX A (continued)

The next three questions are about the support you receive emotionally.

34. How often do you get the emotional support you need from family and friends?

- ☐ Always
- ☐ Usually
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

35. What person or organization do you turn to the most to receive emotional support?

- ☐ Spouse or partner
- ☐ Children
- ☐ Church
- ☐ People I work with
- ☐ Friends
- ☐ Other _____

The last few questions are about your community.

36. In the following list, what do you think are the three most important factors for a "Healthy Community?" Choose ONLY 3.

- | | |
|--|---|
| <input type="checkbox"/> Good place to raise children | <input type="checkbox"/> Excellent race relations |
| <input type="checkbox"/> Low crime/safe neighborhoods | <input type="checkbox"/> Good jobs and healthy economy |
| <input type="checkbox"/> Low level of child abuse | <input type="checkbox"/> Strong family life |
| <input type="checkbox"/> Good schools | <input type="checkbox"/> Healthy behaviors and lifestyles |
| <input type="checkbox"/> Being able to get health care | <input type="checkbox"/> Low adults death and disease rates |
| <input type="checkbox"/> Safe Parks and recreation | <input type="checkbox"/> Low infant deaths |
| <input type="checkbox"/> Clean environment | <input type="checkbox"/> Religious or spiritual values |
| <input type="checkbox"/> Affordable housing | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Arts and cultural events | |

APPENDIX A (continued)

37. In the following list, what do you think are the more most important “health problems” that impact your community’s health? Choose ONLY 3.

- ☐ Aging problems (like arthritis, hearing/vision loss, etc.)
- ☐ Cancers
- ☐ Child abuse/neglect
- ☐ Dental problems
- ☐ Diabetes
- ☐ Domestic Violence
- ☐ Gun violence
- ☐ Heart disease and stroke
- ☐ High Blood Pressure
- ☐ HIV/AIDS
- ☐ Homicide
- ☐ Infant Death
- ☐ Infectious Diseases (like hepatitis, tuberculosis, etc.)
- ☐ Mental health problems
- ☐ Motor vehicle crashes
- ☐ Rape/ Sexual assault
- ☐ Respiratory/ Lung disease (like asthma, COPD)
- ☐ Sexually transmitted diseases (STDs)
- ☐ Suicide
- ☐ Teenage Pregnancy
- ☐ Other_____

APPENDIX A (continued)

38. How would you rate your community as a "Healthy Community?"

- ☐ Very Unhealthy
- ☐ Unhealthy
- ☐ Somewhat Healthy
- ☐ Healthy
- ☐ Very Healthy

39. Do you feel that your community impacts your ability to get preventive services?

- ☐ Yes
- ☐ No

Thank you for taking the time to complete this survey!

If you are interested in participating in the raffle, please click on the link below to leave your FIRST NAME ONLY, phone number, or email address:

<https://www.redcap.ihrp.uic.edu/surveys/?s=LY9RWDHH3C>

Surveys completed by XX will be entered into a raffle for \$100
 Surveys completed by XX will be entered into a raffle for \$75
 Surveys completed by XX will be entered into a raffle for \$50
 Interview Participation

We plan to conduct 20 interviews with women who live in Chicago that complete this survey. Each interview will be a discussion about topics related to your ability and desire to get healthcare, even when you are not sick and things in your life that affect your well-being. Each interview is expected to last about 1 hour and will be held at a location that is private and convenient for you. Vida Henderson, a doctoral candidate at the University of Illinois School of Public Health, will conduct the interview.

Each woman who participates in the interview will receive \$40 at the end of the interview. If you live in Chicago and are interested, please leave your contact information below.

☐ Yes, I am interested in participating in an interview. Please contact me using the following information:

First Name ONLY: _____

I prefer to be contacted by:

- ☐ Phone
- ☐ Email

Phone Number: _____

Email Address: _____

The best times to reach me are: _____

APPENDIX B

Review Information Sheet

Briefing:

TURN ON RECORDER

“Before we start, I want to thank you again for your participation in this study about your well-being and use of well-woman visits and preventive services. This interview will basically be like a long conversation, in which I will ask you questions. It is expected to take about an hour. I want to remind you that it’s fine if there is any question you don’t want to answer, just let me know. It’s important that you feel comfortable. There are no right or wrong answers. Remember I am going to record the interview so I can refer to your comments later. We can also stop the interview at any time.”

I. Psychological Well-Being

1. First, I’d like to talk about *well-being*. When you hear the term, *well-being*, what does that mean to you?
2. Would you please describe your idea of a healthy woman?
 - a. Probe: Physically? Emotionally? Mentally?
3. How are you the same as this woman? How are you different?
4. Still thinking about this woman who has a high sense of well-being, how are you different from her? What things in your life contribute to these differences?
5. How do you create a sense of well-being [or use terms that woman uses] for yourself?
6. What things in your life take away from your well-being?
7. What things in your life contribute or add to your well-being?
8. Sometimes it’s hard to feel good emotionally and physically. When times are hard, what are some things that help you feel better? In the moment? Over time?

II. Preventive Services (General)

1. Some people only go to the doctor when they are sick, others go to the doctor even when they aren’t sick for things like check-ups, screenings and shots, and still others don’t go to the doctor even when they are sick. Where do you fall in regard to when you decide to see a doctor or nurse?
2. Would you tell me about a time when you were sick, but chose not to go to the doctor? Why?
3. Would you tell me about a time when you went to a health provider for a service that might help prevent you from becoming sick or help you stay well?
4. When I use the terms “preventive services” or “preventive care,” what does that mean to you?

APPENDIX B (continued)

- a. Offer definition: Preventive care is seeking care even when you are not sick in order to prevent you from becoming sick, (such as going to check-ups, getting counseling on certain issues, screenings).
5. Do you feel like preventive care is necessary or important to you? Why or why not?
6. I'd like you to think about a scenario. Let's say after this discussion, you really start thinking about the last time you had a physical or had any type of screening to make sure that everything was okay with your health. You leave here today and decide that you will try to make an appointment to see a provider to get a physical and maybe even talk about some concerns you have, like maybe help to stop smoking, talking about some emotional issues, nutrition, whatever is important to you at this time. Walk me through what decisions you would have to make from now until the time you actually get to the doctor's office. For example, who would you have to talk to, make arrangements with? What factors in your everyday life would you have to address or consider in order to make the appointment and actually make it to the appointment?
 - i. Prompts: How easy or difficult would be to get an appointment where you wanted to go?
 - ii. Prompts: Would there be time or scheduling conflicts with work or needing childcare?
 - iii. Prompts: How far or long would you have to travel to make it to the appointment? Would transportation be an issue?
 - iv. Prompts: Who would you have to discuss your desire to see the doctor with? How do you think they would react?
 - v. Prompts: Would insurance coverage or co-payments or deductibles be an issue that you would have to consider?
7. Is there anything that would make it easy [easier] for you to go to a provider for preventive care? If so, what?

III. Well-Woman Visits

So if you remember from the survey, a well-woman visit is a visit that a woman can schedule with a doctor or nurse at least once a year to talk about health habits, get checkups, shots, screenings and counseling.

1. Had you ever heard of the term "well-woman visit" before taking the survey?
2. Have you ever had a well-woman visit before or seen a provider for these types of services?
 - a. If Yes: What influenced you to attend the well-woman visit or get preventive care?
 - b. If No: What stopped or prevented you from attending a well-woman visit or getting a preventive service?
3. When did you have your first well-woman visit [preventive care service]? What or who motivated or influenced you to attend it?

APPENDIX B (continued)

IV. Knowledge of Preventive Care Recommendations and Health Risks

1. What do you think are some of the most important health conditions or diseases that affect African-American women over 40?
2. Do you believe these conditions can be prevented? If so, how?

Certain preventive services are recommended at different time frames. For example, it's recommended that every adult get a flu shot every year, or that every woman over 40 gets a mammogram every 1 to 2 years.

3. How knowledgeable or aware do you feel you are of all of the preventive services that are recommended for women your age?
4. How knowledgeable do you feel you are of how often women your age are supposed to get specific preventive services, like different types of cancer screenings, vaccines?

V. Psychological Well-Being and WWV/Preventive Intersections

1. Do you believe your emotional and mental health influence or impact your physical health?
 - a. If No: Why not?
 - b. If Yes: In what ways?

Closing:

"Thank you so much for sharing your opinions and experiences with me today. This information is very helpful and informative. Is there anything else that you would like to share with me before we end this interview?"

Thanks again. If you have anything else that you would like to share with me or if you have any questions, please feel free to contact me. My email address and phone number are on the form that I gave you before the interview."

Stipend

APPENDIX C

Codebook PWB & Preventive Care Use

PCS = Preventive Care Services

WWV = Well woman visit

APPENDIX C (continued)

Parent Code	Code Name	Construct	Definition
Psychological Well-Being		Any indication, claim, or description of:	
	WB_Meaning	PWB	Self-defined meaning of well-being
	WB_Catalyst/ motivation for shifting toward positive change	Personal growth	Motivating factors that encouraged woman to change negative health behaviors to positive health behaviors
	WB_ Experiencing menopausal symptoms	PWB Risk Factor	Currently undergoing menopause or experiencing menopausal symptoms
Descriptions of Ideal WB			
	WB Ideal_ Positive outlook/ attitude/ happiness/ peace	PWB	Ideal manifestations or qualities of optimal well-being related to positive outlook, attitude, inner feelings
	WB Ideal_ Positive health behaviors	Purpose in Life or Autonomy	Ideal manifestations or qualities of optimal well-being related to positive health behaviors, such as healthy eating and/or physical activity, refraining from substance abuse
	WB Ideal_ Positive relationships & social networks	Positive relations with others	Ideal manifestations or qualities of optimal well-being related to positive, healthy relationships and/or social networks
	WB Ideal_ Physically healthy		
	WB Ideal_ Positive self-image/ independent		
	WB Ideal_ Financially secure		

APPENDIX C (continued)

	WB Ideal_ Spiritual		
	WB Ideal_ Community/Environment		
	WB Ideal_ Coping skills/techniques		
Self-Perceptions/ Manifestations of Positive WB			<< In response to Q: how are you the same as ideal WB woman>>
	WB Self_ Positive outlook/ attitude/ happiness/ peace	PWB: (overall)	Qualities of well-being that woman feels she possesses related to positive outlook, attitude, inner feelings
	WB Self_ Positive Health behaviors	Autonomy	Qualities of well-being that woman feels she possesses related to health behaviors such as healthy eating, physical activity, sleep, refraining from substance abuse, etc.
	WB Self_ Physically healthy	Autonomy	Qualities of well-being that woman feels she possesses related to feeling or being physically healthy
	WB Self_ Positive view of self	Self acceptance	Qualities of well-being that woman feels she possesses related to positive self assessments such as confidence, being a good person, self-acceptance, etc.
	WB Self_ Spirituality	PWB (can be several)	Qualities of well-being that woman feels she possesses related to spiritual beliefs or practices
	WB Self_ Financial stability or mobility	Environmental mastery or Autonomy	Qualities of well-being that woman feels she possesses related to financial stability or improvement in financial standing
	WB Self_ Positive relationships & Social networks	Positive relations with others	Qualities of well-being that woman feels she possesses related to positive, healthy relationships and social networks
Contributors to/Cultivate WB			<<In response to Q: what things add to your sense of WB>>
	WB Contributor_ Financial security or mobility		
	WB Contributor_ Environment/Community	Environmental mastery	Factors that contribute to sense of well-being related to woman's physical environment (home, work) or community, including community engagement
	WB Contributor_ Family/ Relationships	Pos. relations with others/ social support	Factors that contribute to sense of well-being related to family or meaningful relationships
	WB Contributor_ Social networks	Pos. relations with others/ social	Factors that contribute to sense of well-being related to social networks (outside of family or intimate relationships)

APPENDIX C (continued)

		support	
	WB Contributor_ Independence/ Self-control/ Responsible	Autonomy	Factors that contribute to sense of well-being related to possessing independence or control over one's life
	WB Contributor_ Secure, affordable housing	Environmental mastery	Factors that contribute to sense of well-being related to housing security
	WB Contributor_ Work/ Job	PWB (can be several)	Factors that contribute to sense of well-being related to work/job
	WB Contributor_ Maturity/ wisdom	Personal growth	Descriptions of gaining maturity or wisdom over time contributing to sense of well-being
	WB Contributor_ Positive coping skills	PWB (can be several)	Factors that contribute to sense of well-being related to positive, effective coping skills
	WB Contributor_ Finding/Pursuing purpose in life	Purpose in Life	Factors that contribute to sense of well-being related to finding or pursuing one's purpose in life
	WB Contributor_ Personal growth/ accomplishments/ overcoming challenges	Personal growth	Factors that contribute to sense of well-being related to making positive changes in one's life
	WB Contributor_ Physical Health or Appearance/ Positive health behaviors		Physical health, feeling healthy contributes to sense of well-being
	WB Contributor_ Recreation, Music, Dance		
	WB Contributor_ Prayer/Spirituality/ Meditation		
	WB Contributor_ Helping others		
Factors that Diminish WB			<<Also related to Q: How do you differ from ideal WB woman>>
	WB Diminish_ Lack of knowledge or exposure to positive health behaviors	Personal growth	Factors that detract from or diminish well-being related to lack of knowledge of positive health behaviors (ex. not aware of healthy eating practices)
	WB Diminish_ Environment/Community	Environmental mastery	Factors that detract from or diminish well-being related to living environment or community
	WB Diminish_ Negative, stressful or abusive relationships	Positive relations with others	Factors that detract from or diminish well-being related to negative or abusive relationships

APPENDIX C (continued)

	WB Diminish_ Lack of intimate partnerships	Positive relations with others	Factors that detract from or diminish well-being related to loneliness or absence of an intimate relationship
	WB Diminish_ Poor physical health or health behaviors	Can be several	Factors that detract from or diminish well-being related to poor physical health or health behaviors (such as drinking, smoking, drugs, low or no physical activity)
	WB Diminish_ Low self-esteem/ Loss of identity or sense of self	Self-acceptance	Factors that detract from or diminish well-being related to low self –esteem or loss of self-identity or sense of self
	WB Diminish_ Work/Job: Mental or physical strain	Can be several	Factors that detract from or diminish well-being related to Mental stress or strain resulting from employment
	WB Diminish_ Work/Job: Low-income		Factors that detract from or diminish well-being related to Mental stress or strain resulting from employment
	WB Diminish_ Loss/Grief	several	Factors that detract from or diminish well-being related to loss or grief resulting from loss of loved ones or position in life
	WB Diminish_ Financial insecurity or strain/ Housing insecurity	Environmental mastery	Factors that detract from or diminish well-being related to financial insecurity (not necessarily related to job) and/or housing insecurity
	WB Diminish_ No time for self/ Prioritize others over self		
	WB Diminish_ Stress (general)/ Trauma/ Fear		
Preventive Care Services/WWV Use			
Frequency/Utilization		PCS Use	
	Freq_ Sees provider/ Uses PCS regularly		Regular use of preventive care service or seeing provider when needed
	Freq_ Irregular		Irregular or infrequent use of health care services for preventive or sick care
	Freq_ Avoids care due to: Fear Freq_ Avoids care due to: Life challenges Freq_ Avoids care due to: Prioritize others' needs over self		Avoidance of provider visits or seeking care due to: <ul style="list-style-type: none"> • Fear of results or content of visits • Circumstances or challenges in life which make it difficult to seek care • Prioritizing others' needs (e.g., family, clients) over own health or needs

APPENDIX C (continued)

	Freq_ Avoids care due to: Work/Job		<ul style="list-style-type: none"> Conflicts, demands, or time restraints with employment
	Avoids care due to: Insurance/ Costs		
	Freq_ Last PCS: Within past year		Last preventive care service obtained within the past year
	Freq_ Last PCS: Over 1 year ago		Last preventive care service obtained over 1 year ago
	Freq_ Last PCS: Currently scheduled		Next visit for preventive care service currently scheduled for near future
	Freq_ Only when extremely sick		Only sees provider when extremely sick/ last resort
	Freq_ PCS use increased over time		Use of preventive care services increased over time
	Freq_ PCS use decreased over time		Use of preventive care services decreased over time
System- related Facilitators/ of PCS Use		Protective factor - Health system resources	
	Fac_ Positive patient- provider relationships		Positive interactions, communication, and relationships with providers positively impact or influence use of services
	Fac_ Satisfied with provider or provider location		Satisfaction with providers or feeling that provider is “good” positively impacts or influences use of services
	Fac_ Provider educates/reminds on PCS		Provider recommending, counseling, or educating woman on PCS positively impacts or influences use of services
	Fac_ Easy to get appt./see desired provider		Ease of getting an appointment or ability to see desired provider positively impacts or influences use of services
	Fac_ Insurance sends reminders for PCS		Reminders from insurance company positively impacts or influences use of services
	Fac_ Affordable or free insurance/ copayments/ clinic fees		Affordable or ability to pay insurance premiums and copayments positively impacts or influences use of services
	Fac_ Preference for female		Ability to see female provider positively impacts or influences

APPENDIX C (continued)

	provider		use of services
Intra/Interpersonal Motivators/Influences for PCS Use or Positive Health Behaviors			
	Mot_ Positive social support/networks	Protective Factor/ Facilitating Factor	Social networks, family, friends, coworkers, etc. motivates woman to use of services or has social support in place when needed
	Mot_ Inner happiness/resources	Motivation	Inner strength, happiness, sense of or desire for well-being motivates woman to use PCS or engage in positive health behaviors
	Mot_ Upbringing/ Prior examples	Motivation	Values instilled during upbringing or seeing prior examples of others motivates woman to use PCS or engage in positive health behaviors
	Mot_ Family history of condition/ Hereditary factors	Motivation	Genetic predisposition, family history, or hereditary factors motivates woman to use PCS or engage in positive health behaviors
	Mot_ Environment/ Community	Protective Factor/Motivation	Environment or community factors motivates woman to use PCS or engage in positive health behaviors
	Mot_ Work	Motivation	Employment in civil, social, or healthcare services motivates (or requires) woman to use PCS or engage in positive health behaviors
	Mot_ Self motivated/proactive in maintaining MH and/or PH	Motivation	Intrinsic or self-motivation in maintaining health motivates woman to use PCS or engage in positive health behaviors
	Mot_ Catch conditions early	Motivation	Desire to catch possible illnesses early motivates woman to use PCS or engage in positive health behaviors
	Mot_ Seeing others ill/die	Motivation	Seeing others ill or death of loved ones or clients motivates woman to use PCS or engage in positive health behaviors
	Mot_ Possesses Knowledge of PCS/Self-research	Motivation	Knowledge or self-research (ex. googling health issues) motivates woman to use PCS or engage in positive health behaviors
	Mot_ Be healthy for family/ example to family	Motivation	
	Mot_ Encourages others to get care/ be healthy		
	Mot_ Desire to be	Motivation	

APPENDIX C (continued)

	physically healthy/ Longevity/ QOL		
	Mot_ Physical symptom or concern		
Barriers to PCS Use or Physical Health			
	Bar_ None due to competing demands	Interpersonal Factor: Barrier	No barriers experienced or attributed to competing demands (ex. work, childcare)
	Bar_ None due to transportation or location of services		
	Bar_ None with seeing desired providers or getting appointment	Interpersonal Factor: Barrier	No barriers with ability to see desired providers or getting appointments
	Bar_ None associated with cost		
	Bar_ Insurance	Risk Factor	Challenges with using PCS or maintaining physical health associated with insurance bureaucracy or differences in treatment or access based on insurance type, difficulties getting insurance, etc.
	Bar_ Lack of knowledge, health educators/mentors	Interpersonal Factor: Barrier	Challenges with using PCS or maintaining physical health associated with lack of knowledge or access to health educators
	Bar_ No paid sick leave/ work conflicts	Risk Factor	Challenges with using PCS or maintaining physical health associated with work conflicts or no paid sick leave
	Bar_ Transportation/ Parking/ Location of services	Interpersonal Factor: Barrier	Challenges with using PCS or maintaining physical health associated with transportation
	Bar_ Provider	Risk Factor	Challenges with using PCS or maintaining physical health associated with discomfort, dissatisfaction, poor quality, or poor communication with provider
	Bar_ Discomfort with examinations	Risk Factor	Challenges with using PCS or maintaining physical health associated with discomfort with examinations or medical procedures (ex. pap smears, breasts exams)
	Bar_ Cost/Low-income	Interpersonal Factor: Barrier	Challenges with using PCS or maintaining physical health associated with ability to afford associated costs
	Bar_ Appointment		

APPENDIX C (continued)

	structures or ability to see desired provider		
	Bar_ Community/ Environment		
	Bar_ Lack of childcare		
	Bar_ Competing demands		
Preventive Care/ Services		PCS Use	
	PC_ Meaning		Self-defined meaning of "preventive care"
	PC_ Importance to Self		Importance of PC to self
	PC_ Importance to Others		Perceptions of Importance of PC to others (family, community, etc.)
	PC_ First PC Visit: Pregnancy PC_ First PC Visit: Age PC_ First PC Visit: Other reason		First PC visit was due to pregnancy Age at first PC visit Reason for first PC visit
	PC_ Mammogram: Yes (+ reason) PC_ Mammogram: No PC_ Mammogram: Age at first PC_ Mammogram: Previous abnormal		Has had at least 1 mammogram Has never had mammogram (including reasons given for not obtaining) Age at first mammogram Has had a previous abnormal mammogram
	PC_ Pap: Yes (+ reason) PC_ Pap: No PC_ Pap: Age at first PC_ Pap: Previous abnormal		Has had at least 1 pap smear Has never had a pap smear (including reasons given for not obtaining) Age at first pap smear Has had a previous abnormal pap smear

APPENDIX C (continued)

	PC_ Pap: Not needed		Previous hysterectomy or cervical removal
	PC_ Regular Flu Shots: Yes (+ reason)		Obtains regular/yearly flu shots
	PC_ Regular Flu Shots: No		Does not obtain regular/never flu shots (including reasons given for not obtaining)
	PC_ Regular Flu Shots: History of respiratory illness		Has a history of respiratory illness
	PC_ BST-Colonoscopy: Yes (+ reason)		Has had a blood stool test or colonoscopy
	PC_ BST-Colonoscopy: No		Has never had a blood stool test or colonoscopy
	PC_ BST-Colonoscopy: No, under 50		
	PC_ Pneumonia vaccine (general)		
Beliefs		Intra/Interpersonal Factors: Beliefs	
	Blf_ Conditions that most affect AAW		Beliefs of conditions believed to most affect AAW
	Blf_ Preventability of certain conditions		Beliefs regarding preventability of conditions that most affect AAW
	Blf_ Mental health impacts physical health		Belief that mental health impacts or is connected to physical health
	Blf_ No connection b/w MH & PH		Belief that there is no connection between mental health and physical health
	Blf_ Deficit in MH care in AA or low-income communities		Belief that there is stigma, disparity or lack of mental health care access, practitioners, or desire to seek mental health in African-American communities or in low-income communities
	Blf_ Low WB less likely to seek care		Belief that women with low sense of well-being are less likely to seek care

APPENDIX C (continued)

	Blf_ High WB more likely to seek care Blf_ Low WB more likely to seek care Blf_ High WB less likely to seek care Blf_ No connection b/w WB and likeliness to seek care		Belief that women with high sense of well-being are more likely to seek care Belief that women with low sense of well being are more likely to seek care Belief that women with high sense of well-being are less likely to seek care Belief that there is no connection between WB and likeliness to seek care
	Blf_ Beliefs regarding certain preventive services		Other beliefs regarding preventive services
Knowledge		Intra/Interpersonal Factors: Knowledge	
	Know_ Confidence in knowledge of recs: Fully Know_ Confidence in knowledge of recs: Some Know_ Confidence in knowledge of recs: Lacking/ Confusion		Self-perception of being fully confident in knowledge of PCS recommendations Self-perception of being somewhat confident in knowledge of PCS recommendations Self-perception that knowledge if lacking or confused regarding PCS recommendations
	Know_ Demonstrated knowledge of recs: Fully Know_ Demonstrated knowledge of recs: Some Know_ Demonstrated		Woman demonstrated full knowledge of PCS recommendations during interview Woman demonstrated some knowledge of PCS recommendations during interview

APPENDIX C (continued)

	knowledge of recs: Lacking/ Confusion		Woman demonstrated a lack of knowledge of or confusion with PCS recommendations
	Know_ Proactive in increasing health knowledge/ literacy		Proactive or engaged in increasing health knowledge
	Know_ Obtains knowledge from: Social network Know_ Obtains knowledge from: Working in healthcare field Know_ Obtains knowledge from: Utilizing health education opportunities Know_ Self-research		Obtains knowledge through social network, peers, family Obtains knowledge by working in health care field Obtains knowledge through engaging in educational opportunities (ex. community organization forums, cancer walks/rallies) Obtain knowledge by researching things for self
	Know_ Term WWV: Yes Know_ Term WWV: No Know_ Term WWV: Not sure		Knowledge of term “well woman visit” No knowledge of term “well woman visit” Not sure if they are knowledgeable of term “well woman visit”
	Know_ Others (Family, friends, community)		Descriptions of others’ perceived knowledge of preventive care or health conditions
Social Social demographic Characteristics			
	SD_ Insurance: ACA (County Care)/ Medicaid expansion (Harmony) SD_ Insurance: Private or SEIU SD_ Insurance: None		Has insurance through ACA (aka, County Care) Has private or SEIU insurance Does not have insurance

APPENDIX C (continued)

	SD_ Age		Woman's age
	SD_ Children <18 in house		Lives with children less than 18 years of age in home
	SD_ Caretaker inside home (adults)		Cares for other adults inside home (excluding spouse, but including adult children, siblings, parents, etc.)
Other			
	Opinions regarding Obamacare	Beliefs/Knowledge	General opinions regarding Obamacare
	Current/Past health conditions		
	General concerns about finances		

APPENDIX D

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APPENDIX E

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Publication: Medical Care

Publisher: Wolters Kluwer Health, Inc.

Date: Jul 1, 2008

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VITA

Vida A. Henderson

RESEARCH AND TEACHING INTERESTS

- Qualitative and mixed methods research methodology
- Racial and gender health disparities and inequities, well-being, women's health, health communication, aging, prevention of negative mental health outcomes, community-based participatory research approaches
- Multilevel approaches to health behavior research
- Psychosocial factors in health behavior and health promotion theory

EDUCATION

- 2012 - 2017 **Doctoral Candidate (PhD)**, Community Health Sciences
University of Illinois at Chicago
Chicago, Illinois
- 2010 – 2012 **Master of Public Health**, Health Behavior and Health Education
University of Michigan
Ann Arbor, Michigan
- 2006 – 2008 **Master of Fine Arts**, Creative Writing
Queens University of Charlotte
Charlotte, North Carolina
- 1993 – 2000 **Doctor of Pharmacy**
Xavier University of Louisiana
New Orleans, Louisiana

PHARMACIST LICENSURE

2013	State of Illinois	License # 051.296491
2011	State of Michigan	License # 5302040376
2000	State of Louisiana	License # PST.016870

RESEARCH EXPERIENCE

- 2017 - **Research Scientist**
UIC Cancer Center
Office of Community Engagement and Research Implementation Science
Chicago, Illinois
- 2015 - 2017 **Project Director**
The Well-Woman Project
University of Illinois at Chicago School of Public Health
Chicago, Illinois

- Develop qualitative assessment instruments; collaborate with CityMatCH and city health department officials to collect qualitative data (focus groups, women's stories); facilitate focus groups at 8 urban city health departments throughout the US; analyze qualitative data; report and disseminate findings through manuscripts, reports, and presentations

2015

Graduate Research Assistant

MPH Pilot Integrated Core Curriculum Evaluation

University of Illinois at Chicago School of Public Health, Office of the Dean
Chicago, Illinois

- Analyzed and reported qualitative data (focus groups, student and faculty survey responses, curriculum evaluation questionnaires) as part of a pilot integrated core curriculum evaluation

2014 - 2015

Graduate Research Assistant

Postpartum Visit and Contraception Choices Study

University of Illinois at Chicago School of Public Health
Chicago, Illinois

- Developed qualitative and quantitative assessment instruments in REDCap; conducted participant interviews; analyzed qualitative data; reported and disseminated findings through manuscripts, reports, and presentations

2013 - 2015

Graduate Research Assistant

Promoting Seniors' Health with Home Care Aides

University of Illinois at Chicago, Institute of Health Research and Policy
Chicago, Illinois

- Developed and tested qualitative and quantitative measurement instruments; planned and implemented pilot study; trained and interviewed participants; recruited participants; performed qualitative and quantitative data collection and analysis; created intervention materials; developed data management and scheduling system within REDCap; reported findings

2014 - 2015

Graduate Research Assistant

Enhanced Home Care Aide Training Pilot Evaluation

University of Illinois at Chicago, Institute of Health Research and Policy
Chicago, Illinois

- Developed qualitative and quantitative assessment instruments; attended trainings in collaboration with community partners; conducted focus group; analyzed qualitative and quantitative data; reported and disseminated findings

2013 – 2014

Graduate Research Assistant

Illinois Breast and Cervical Cancer Program Evaluation

University of Illinois at Chicago School of Public Health
Chicago, Illinois

- Evaluated the effectiveness of program by conducting qualitative analysis of interviews; collected and developed survey data instruments in Qualtrics; developed manuscript and presentation materials

2013

Graduate Research Assistant

Urban Medicine Program
University of Illinois College of Medicine at Chicago
Chicago, Illinois

- Reviewed and reported literature; developed manuscript; contributed expertise of community-based participatory research

2010 – 2013

Graduate Research Intern

Center for Health Communications Research
University of Michigan
Ann Arbor, Michigan

- Developed content of federally funded health interventions in collaboration with the University of Michigan Comprehensive Cancer Center; applied principles of tailoring to health behavior initiatives through advanced content development and testing for print and multi-media interventions utilizing health behavior theories, principles of motivational interviewing, community-based participatory research, and user-centered design; manuscript development

TEACHING EXPERIENCE

Spring 2013 **Graduate Teaching Assistant, Maternal Child Health**, University of Illinois at Chicago School of Public Health

Fall 2012 **Lecturer, Qualitative Research Methods**, “Interviewing Skills,” (Graduate level, 3 credits) University of Illinois at Chicago School of Public Health

Fall 2012 **Graduate Teaching Assistant, Qualitative Research Methods** (Graduate level, 3 credits) University of Illinois at Chicago School of Public Health

Spring 2010 **Instructor, Exploring Global Health Disparities** (Graduate level, 3 credits) Xavier University of Louisiana College of Pharmacy

2009 – 2010 **Clinical Pharmacy Preceptor, Ambulatory Care Rotation**
Saint Vincent de Paul Community Pharmacy, New Orleans, Louisiana

2007 – 2010 **Clinical Pharmacy Preceptor, Elective Teaching Rotation**, Xavier University of Louisiana College of Pharmacy

Fall 2007 **Instructor, Pharmacy Practice Lab**, 4 Sections (Graduate level, 1 credit) Xavier
Fall 2008 University of Louisiana College of Pharmacy
Fall 2009
Summer 2010

Fall 2007 **Lecturer, Pharmacy Practice Lecture**, “Pharmaceutical Calculations,”
Fall 2008 (Graduate level, 3 credits) Xavier University of Louisiana College of

Fall 2009 Pharmacy
 Summer 2010

2006 – 2007 **Clinical Pharmacy Preceptor, Ambulatory Care Rotation, Operation Blessing**
 New Orleans, Louisiana

PROFESSIONAL & CLINICAL EXPERIENCE

2015 **Clinical Staff Pharmacist**
 Comprehensive Pharmacy Services
 Mercy Hospital
 Chicago, Illinois

2008 – 2010 **Pharmacist, Hospital/Long-Term Healthcare**
 National Infusion Services
 Baton Rouge, Louisiana

2006 - 2010 **Clinical Instructor, Clinical Pharmacist**
 Xavier University of Louisiana College of Pharmacy
 New Orleans, Louisiana

2004 – 2010 **Curves for Women Franchise Owner**
 Curves, Inc.
 New Orleans, Louisiana

2000 – 2006 **Pharmacist, Retail**
 Walgreens Pharmacy
 New Orleans, Louisiana

1996 – 2000 **Pharmacy Student, Hospital**
 University Hospital
 New Orleans, Louisiana

GRANTS AND AWARDS

1. 1R36AG054652-01 (\$58,442)
National Institute on Aging, Aging Research Dissertation Award to Increase Diversity Principal Investigator, "Understanding the Relationship between Psychological Well-Being and Well-Woman Visit and Preventive Care Use in Midlife African-American Women."
2. *2016 Alice J. Dan Dissertation Research Award.* UIC Center for Research on Women and Gender (\$500)
3. *2016 Dissertation Research Grant,* UIC Institute for Research on Race and Public Policy (\$1000)
4. *2015 2nd Annual Women's Health Research Day Poster Presentation Winner,* UIC Center for Research on Women and Gender (\$200)
5. *2013 Mid-America Center for Public Health Practice Scholarship,* UIC School of Public Health (\$750)

6. 2010-2012 *School of Public Health Dean's Tuition Award*, University of Michigan
7. 2011 *Blue Mountain Project Team*, Hagley Gap, Jamaica, Students Engaged in Global Health, University of Michigan
8. 2009-2010 *Faculty Communities of Teaching Scholars (FaCTS) Fellow*, funded by Andrew W. Mellon Foundation, *Exploring Global Health Disparities* (\$5000)
9. *Cave Canem Poetry Fellow 1999, 2000, 2002*, Cave Canem Foundation

PEER-REVIEWED PUBLICATIONS

1. **Henderson, V.**, Stumbras, K., Caskey, R., Haider, S., Rankin, K., & Handler, A. (2016). Understanding factors associated with postpartum visit attendance and contraception choices: Listening to low-income postpartum women and health care providers. *Maternal and Child Health Journal*, 20 (7) 132-143. doi: 10.1007/s10995-016-2044-7.
2. Girotti, J. A., Loy, G. L., Michel, J. L. & **Henderson, V. A.** (2015). The Urban Medicine Program: Developing Physician-Leaders to Serve Underserved Urban Communities. *Academic Medicine*, 90 (12), 1658-1666. doi: 10.1097/ACM.0000000000000970.
3. Muramatsu, N., Madrigal, J., Berbaum, M. L., **Henderson, V. A.**, Jurivich, D. A., Zanoni, J., Marquez, D. X., & Madrid, K. C. (2015). Co-Learning With Home Care Aides and Their Clients: Collaboratively Increasing Individual and Organizational Capacities. *Gerontology & Geriatrics Education*, 36(3), 261-277. doi: 10.1080/02701960.
4. Handler, A. S., **Henderson, V. A.**, Rosenfeld, A., Rankin, K., Jones, B., & Issel, L. M. (2014). Illinois Breast and Cervical Cancer Program: Implementing Effective Public-Private Partnerships to Assure Population Health. *Journal of Public Health Management and Practice*, 21(5), 459-466. doi: 10.1097/PHH.0000000000000191.
5. **Henderson, V. A.**, Barr, K. L., An, L. C., Guajardo, C., Newhouse, W., Mase, R., & Heisler, M. (2013). Community-Based Participatory Research and User-Centered Design in a Diabetes Medication Information and Decision Tool. *Progress in Community Health Partnerships: Research, Education, and Action*, 7(2), 171-184. doi: 10.1353/cpr.2013.0024.

PEER-REVIEWED ABSTRACTS

1. **Henderson, V.**, Madrigal, J., Handler, A. (2017). Psychological Well-Being and Preventive Services Use in Midlife African American Women. 23rd *Annual Qualitative Health Research Conference*. Quebec City, Canada. (Presentation)
2. **Henderson, V.**, Madrigal, J., Handler, A. (2017). Psychological Well-Being and Preventive Services Use in Midlife African American Women. 144th *American Public Health Association Annual Meeting and Exposition*, Atlanta, Georgia. (Presentation)
3. **Henderson, V.** & Handler, A. (2017). Understanding the Relationship between Psychological Well-Being and Well-Woman Visit and Preventive Care Use in Midlife

African-American Women. *144th American Public Health Association Annual Meeting and Exposition*, Atlanta, Georgia.

4. **Henderson, V.** & Handler, A. (2017). Understanding the Relationship between Psychological Well-Being and Well-Woman Visit and Preventive Care Use in Midlife African-American Women. *The 25th Anniversary Congress on Women's Health*, Washington, D.C.
5. **Henderson, V.**, Johnson, R., Turino, C., Peacock, N., Pecha, D., Gordon, M. & Handler, A. (2017). Listening to Women about What it Takes to Be a Well-Woman. *The 25th Anniversary Congress on Women's Health*, Washington, D.C.
6. **Henderson, V.**, Johnson, R., Turino, C., Peacock, N., Pecha, D. & Handler, A. (2016). Listening to Women: Discussion of Well-Women and Well-Woman Care in Eight Cities. *CityMatCH Leadership and MCH Epidemiology Conference*, Philadelphia, Pennsylvania.
7. **Henderson, V.**, Stumbras, K., Berkeley, E., Caskey, R., Haider, S., Rankin, K., & Handler, A. (2016). Understanding Factors Associated with Postpartum Visit Attendance and Contraception Choices: Listening to Low-Income Postpartum Women and Health Care Providers. *143rd American Public Health Association Annual Meeting and Exposition*, Chicago, Illinois.
8. **Henderson, V.**, Stumbras, K., Caskey, R., Haider, S., Rankin, K., & Handler, A. (2016). Understanding Factors Associated with Postpartum Visit Attendance and Contraception Choices: Listening to Low-Income Postpartum Women and Health Care Providers. *2nd Annual Women's Health Research Day*, Chicago, Illinois.
9. Handler, A., **Henderson, V.**, Rosenfeld, A., Rankin, K., Jones, B & Issel, L.M. (2014). The Role and Value of Public-Private Partnerships. *142nd American Public Health Association Annual Meeting and Exposition*, New Orleans, Louisiana.
10. Handler, A., **Henderson, V.**, Rosenfeld, A., Rankin, K., Jones, B & Issel, L.M. (2014). Illinois Breast and Cervical Cancer Program: Implementing Effective Public-Private Partnerships to Assure Population Health. *CityMatCH Leadership and MCH Epidemiology Conference*, Phoenix, Arizona.
11. Puig Abril, E. & **Henderson, V.** (2014). My Phone and Me: Assessing the Contribution of Mobile Technologies for Trackers of Weight and Exercise. *International Communication Association Mobile Preconference*, Seattle, Washington.
12. **Henderson, V.** & Illaraza, D. (2012). Community-based Participatory Research and User-centered Design in a Tailored, Interactive, Diabetes Decision Aid. *Center for Bioethics and Social Sciences in Medicine Research Colloquium*, University of Michigan.
13. Isaac, K., **Henderson, V.** & LaRochelle, J. (2010). Use of Peer Evaluation to Enhance Student Confidence, Attitude, and Quality of SOAP Notes. *American Association of Colleges of Pharmacy Conference*, Seattle, Washington.
14. **Henderson, V.**, Isaac, K., Mitchell, A., Oliver, H., Ngo, N., Nguyen, D. & Nguyen, J. (2009). Use of Video and Peer-Teaching to Enhance Communication Skills in an Introductory

Pharmacy Practice Experience Program. *American Association of Colleges of Pharmacy Conference*, Boston, Massachusetts.

INTERVIEW TRANSCRIPTS AND ARTICLES

1. *UIC Receives Grant to Study Relationship between Psychological Well-Being and Preventive Care Use* (2017 March 3). Association of Schools & Programs of Public Health Friday Letter. <http://www.aspph.org/uic-receives-grant-to-study-relationship-between-psychological-well-being-and-preventive-care-use/>
2. *Getting to Know UIC SPH Researchers* (2017). <http://publichealth.uic.edu/research/getting-to-know-uic-sph-researchers>
3. *How the Power of Voice Can Change Public Health* (2016). <http://depts.washington.edu/nwbfch/archives/how-power-voice-can-change-public-health>
4. **Henderson, V.**, Guajardo, C., & Palmisano, G. (2013). Podcast Interview Transcript. *Progress in Community Health Partnerships: Research, Education, and Action*, 7(2), 185-189.

REPORTS

1. **Henderson, V.** (August 2015). 2014-2015 University of Illinois at Chicago Master of Public Health Pilot Integrated Core Curriculum Evaluation of Qualitative Data.
2. **Henderson, V.**, Stumbras, K., Berkeley, E. & Handler, A. (January 2015). *Findings from Key Informant Interviews with Postpartum Providers Appendix G*. Prepared for the Illinois Department of Healthcare and Family Services, University of Illinois School of Public Health. <https://www.healthmanagement.com/wp-content/uploads/postpartum-visit-and-contraception-study-final-report.pdf>
3. **Henderson, V.**, Stumbras, K., Berkeley, E. & Handler, A. (January 2015). *Findings from Key Informant Interviews with Low-Income Postpartum Women Appendix F*. Prepared for the Illinois Department of Healthcare and Family Services, University of Illinois School of Public Health. <https://www.healthmanagement.com/wp-content/uploads/postpartum-visit-and-contraception-study-final-report.pdf>
4. **Henderson, V.**, Muramatsu, N. & Zaroni, J. (December 2014). *Enhanced Home Care Aide Training Evaluation*. Prepared for Service Employees International Union Healthcare Illinois and Indiana (SEIU HCII), University of Illinois School of Public Health/Institute for Health Research and Policy.

SERVICES TO JOURNALS

Reviewer:

1. *Progress in Community Health Partnerships: Research, Education, and Action*
2. *Health Communication*
3. *Reproductive Health*
4. *Journal of Women's Health*

ACADEMIC SERVICE AND COMMITTEES

2013 **Mentor**, (AgeOptions) Mid-America Institute for Faith and Public Health, UIC
 2012 – 2014 **Member**, Community Health Sciences PhD Student Committee

LITERARY PUBLICATIONS

1. "The Boucherie," "Mama Gertie Bell Speaks to Her Granddaughter." *The Ringing Ear: Black Poets Lean South*. Nikky Finney (editor). The University of Georgia Press, 2007.
2. "When My Grandfather Died," "Crescent City Sore," "Dragonflies." *Pembroke Magazine*. No. 39. Shelby Stephenson (editor). University of North Carolina, 2007.
3. "When My Grandfather Died." *Cave Canem VII*. Yona Harvey, Terrance Hayes, Sarah Micklem (editors). Cave Canem, 2002.
4. "The Tree on Guillot Road." *Cave Canem V*. Toni Brown, Yona Harvey, Terrance Hayes, Nzadi Keita, Cherise Pollard (editors). Cave Canem, 2000.
5. "The Boucherie." *Xavier Review*. Vol. 19 No. 2. Thomas Bonner Jr. (editor). New Orleans: Xavier Review Press, 1999.

PROFESSIONAL AFFILIATIONS

Academy of Women's Health 2016-
 Gerontological Society of America 2016
 International Positive Psychology Association (IPPA) 2013-
 American Public Health Association (APHA) 2012-
 Public Health Student Association (PHSA) 2010- 2012
 Students Engaged in Global Health (SEGH) 2011- 2012
 Center for Global Health Student Associate 2010- 2012