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THE EXAMINATION OF HEALTH CARE SYSTEM DISTRUST AS A BARRIER TO UTILIZATION AND ENGAGEMENT OF PREVENTIVE SERVICES IN THE HEALTH CARE SYSTEM IN BLACK EMERGING ADULTS, WITH A SPECIAL FOCUS ON INSURANCE STATUS AND USUAL SOURCE OF CARE.

Alexandra Wynn
Virginia Commonwealth University

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A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science

at Virginia Commonwealth University.

By

Alexandra M. Wynn

Bachelor of Science

St. Bonaventure University, 2019

Director: Kristina B. Hood, PhD

Assistant Professor, Department of Psychology

Virginia Commonwealth University

Richmond, Virginia

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Abstract

Health care system distrust is a well-known barrier to health utilization and engagement in older African Americans. However, it has not been explored in Black emerging adults, individuals 18-26. It is important to explore the social and psychological effects of systemic barriers, such as health care system distrust, in this developmental period as emerging adults undergo unique demographic shifts, changes in sense of self, and identity exploration. Due to emerging adulthood being an exploratory and challenging transitionary phase, emerging adults have an increased susceptibility to preventable morbidity and mortality issues and decreased access to important preventive services. Thus, health care system distrust and how it interacts with other barriers to accessing health services, specifically preventive care, needs to be examined in Black emerging adults. The current study aimed to evaluate if insurance access and usual source of care influences the relationship between health care system distrust and preventive service utilization and engagement. A confidential Qualtrics survey was completed by 329 participants, utilizing college student and community based recruitment procedures. Two moderated moderations in SPSS 27 using Hayes' (2020) PROCESS macro assessed the two outcomes of preventive service receipt and routine health examinations. The proposed hypotheses were not supported, however

additional analyses were conducted that examined how trust in provider and other demographic factors influenced the relationship between health care system distrust and both outcomes. This study explores the implications of these discoveries and how they can be used to improve health outcomes and quality of care for Black emerging adults.

Keywords: African American, emerging adults, preventive services, health care system distrust

Vita

Alexandra Mallory Wynn was born on September 6, 1998, in Columbia, Maryland and is a United States citizen. She graduated from Western School of Technology and Environment Science, Catonsville, Maryland in 2016. She received her Bachelor of Science in Health Science with dual minors in Psychology and Sociology from St. Bonaventure University in 2019. Throughout her time at her undergraduate institution, she interned with several institutions including the National Institute on Drug Abuse, Columbia University Medical Center, and University of Maryland, College Park. This led Alexandra to pursue her doctoral degree in Health Psychology at Virginia Commonwealth University, Richmond, Virginia.

The Examination of Health Care System Distrust as a Barrier to Utilization and Engagement of Preventive Services in the Health Care System in Black Emerging Adults, With a Special Focus on Insurance Status and Usual Source of Care.

African Americans suffer significant health and racial disparities in health insurance coverage, chronic health conditions, preventive services, and mortality. Compared to the White population, Black Americans are 80% more likely to be diagnosed with diabetes, and 40% more likely to die of breast cancer (Cigna, 2016). Specifically, Black adults are uninsured or underinsured at higher rates, have less access to health care services and receive lower quality of care than other racial and ethnic minorities (Brenick et al., 2017). One way to decrease health care disparities would be through preventive services, specifically targeting the emerging adult population, ages 18-26. Despite the benefits of preventive services, researchers and practitioners have seen a low engagement and utilization in both the Black and emerging adult populations.

Overall, emerging adults are susceptible to many preventable health morbidity and mortality issues, including substance use, obesity, sexually transmitted infections (STIs), mental health disorders and injury (Adams, Park, & Irwin, 2015; Adams et al., 2019), as they are the least likely age group to be insured, use ambulatory medical care services, or have a usual source of care (Ozer et al., 2012). Many challenges prevent emerging adults from engaging in the healthcare system including insurance access, discontinuities in care, lack of providers specifically trained to serve emerging adults, and inadequate awareness of health risk (Adams et al., 2019; Callahan, 2012). Compared to White Americans, young African Americans, including emerging adults, are being diagnosed with diseases more prevalent at older ages, such as high blood pressure (CDC, 2017). Social factors such as high rates of unemployment, living in poverty, lack of home ownership, and inability to see a doctor because of cost, contribute to

these health risks at a higher rate for African Americans compared to White individuals (CDC, 2017).

One aspect of preventive services that has not been examined as a barrier to access and usage in Black emerging adults is distrust of the overall health care system. Health care system distrust can be defined as the lack of trust or suspicion toward health care services and the general health care system (Armstrong et al., 2013; Cuevas, O'Brien & Saha, 2019; LaVeist, Isaac, & Williams, 2009). It has been found to be associated with negative health behaviors and outcomes among older African Americans. Past research has shown that African American exhibit higher rates of distrust than their White counterparts (Armstrong et al., 2008; Armstrong et al., 2013; Brandon, Isaac, & LaVeist, 2005; Cuevas, O'Brien, & Saha, 2019; LaVeist, Isaac, & Williams, 2009; Sutton et al., 2019). Thus, this study aims to examine the influence of health care system distrust in a Black emerging adult sample to improve quality of care and health outcomes overall for the Black population.

The literature for both emerging adults and African Americans places an extreme emphasis on insurance and an usual source of care. The Affordable Care Act (ACA) in 2010 increased preventive service and dependence coverage for emerging adults that resulted in increased insurance access and health service engagement overall. In addition, research has documented how having a usual source of care increases the likelihood of receipt of preventive services in both Black adults and emerging adults. Despite the ACA, it is unknown why emerging adults face a persistent lack of insurance access and low utilization of health services, including usual sources of care, specifically among Black young men as they are more likely to seek care at emergency departments. Thus, it is important to analyze how having an usual source of care affects preventive services as it could potentially account for the known sex differences

in emerging adults due to females' potential primary use of gynecologists/obstetricians (OB/GYN) as their usual source of care. The lack of understanding of barriers of emerging adult health overall and preventive services is alarming and needs to be investigated to better design interventions that advance the health of Black emerging adults in the United States.

This study seeks to explore health care system distrust as a barrier to the utilization and engagement of preventive services in the healthcare system and how insurance and an usual source of care influence this relationship. Health locus of control (HLOC), risk perception, sex-assigned at birth, and in-school status will be used as covariates as these are correlates have been related to engagement in health care, but not been studied in conjunction with distrust in the emerging adult population.

Review of Literature

The Unique Period of Emerging Adulthood. It is important to study emerging adults due to the unique life phase they are in, that is specific to individuals 18-26 years of age and not those in adolescence or older adulthood. Arnett (2000) describes this period as one of change and exploration due to independence from social roles and societal expectations as well as demographics, identity explorations and subjective perceptions. Due to demographic shifts in marriage and parenthood, emerging adulthood becomes a time where individuals can explore life's various directions without the lasting responsibilities that come with full adulthood (Arnett, 2000). This is different from adolescence or adults over 30 as most individuals in these age groups can be described by similar demographics. For example, most adolescents still live at home with a guardian, are unmarried, and are in school (Arnett, 2000). In comparison to adolescents, young adults, defined as ages 20-29 by the researchers, not only have higher mortality rates but higher incidences of suicide, HIV, smoking, binge drinking, and illicit drug

use (Fortuna, Robbins, & Halterman, 2009). On the other hand, most 30-year old's have married, become parents, and are not in school (Arnett, 2000). In comparison to older adults, young adults have higher rates of STIs, illicit drug use, alcohol use and tobacco use (Fortuna, Robbins, & Halterman, 2009). There are no demographic trends that can describe emerging adults besides the instability of their living situations as emerging adults could be living at college in a dormitory, independently and working full time, with a partner or at home with family (Arnett, 2000; Park et al., 2006). This instability is seen not only through changes in education and residential status, but in emerging adults' sense of self. Most emerging adults do not see themselves as adolescents or adults, more of an in-between phase as they know they have left adolescence but have not completely begun young adulthood (Arnett, 2000). This transition is most notably marked by emerging adults through three characteristics including accepting responsibility for oneself, making independent decisions and becoming financially independent (Arnett, 2000). This could potentially be why emerging adults are susceptible to so many risky health behaviors and lack of health knowledge due to the potential lack of these characteristics from the transition from adolescence to adulthood (Park et al., 2006; Harris et al., 2006).

Additionally, identity exploration in love, work and worldviews is specific to being an emerging adult's (Arnett, 2000). Emerging adults explore variations in each that will hopefully translate into what they want in later adulthood. Arnett (2000) suggests that identity exploration is a potential explanation for risk behavior seen in emerging adults. Just like other literature, Arnett (2000) notes emerging adults increase in risky behaviors, such as unprotected sex, substance abuse and driving behaviors such as driving while drunk and at high speeds (Fortuna, Robbins & Halterman, 2009; Graves et al., 2019; McCracken, Jiles, & Blanck, 2007; Park et al., 2006). Additionally, homicides, unprotected sex, car injuries, substance abuse and STIs have

been shown to peak during young adulthood (Park et al., 2006). Arnett accounts this high rate of risk behavior to identity explorations as emerging adults may feel the need to explore different types of experiences before fully transitioning into adulthood (2000). Furthermore, risk behavior is often related to sensation seeking. Emerging adults can have more of these types of experiences due to the lack of parental supervision, own parental roles, and children (Arnett, 2000). Therefore, it is important to study emerging adults and preventive services. They are susceptible to many health conditions, potentially due to a period dedicated towards curiosity and diversity of experiences (Arnett, 2000; Graves et al., 2019; Irwin, 2010; Ozer et al., 2012). Research needs to continually study emerging adult's risk perception in addition to other speculated barriers to health promotion and preventive services, such as health care system distrust, insurance status, and usual source of care, to learn more about how they perceive their individual health and their actions because of it.

Preventive Services Overall. Preventive health care is any service that assists in detecting or preventing medical issues, illnesses, and diseases, including routine health visits, cancer screenings and immunizations (Cigna, n.d.). Preventive services have been studied with many factors including well visits (Adams et al., 2018), socioeconomic status (Sambamoorthi & McAlpine, 2003), access to health care (Sambamoorthi & McAlpine, 2003), perceived discrimination (Trivedi & Ayanian, 2006), location of residence (Cornelius, Smith & Simpson, 2002, self-rated health (Cornelius, Smith & Simpson, 2002), masculinity (Hammond et al., 2010), social class (Olade & Barnett, 2006), and county characteristics (Benjamins, Kirby & Bond, 2004). Additionally, prior research has shown that engagement and utilization in preventive services have been associated with insurance access and an usual source of care; when an individual has insurance and an usual source of care, they are more likely to receive

preventive services (Irwin, 2010; Ozer et al., 2012; VanGarde et al., 2018). From 2013-2015, young adults, the term used for the sample of individuals ages 18-25, who went to their well visit had significantly higher preventive service engagement, including blood pressure check, cholesterol check, and receiving a flu shot, than those who only had a non-preventive visit (Adams et al., 2018). This is a significant finding as it supports the idea that increasing the delivery of preventive and well health visits can lead to increased receipt of preventive services, especially in emerging adults. Even though healthcare system distrust has been shown in past research to affect health care engagement in older African Americans with chronic conditions, few studies have investigated its influence on preventive care in emerging adults. However, the literature still has not been able to paint a clear picture as to how insurance affects preventive services engagement among emerging adults, and whether having a usual source of care can improve engagement in preventive care among this population.

Usual Source of Care. An usual source of care is a specific medical professional or physician's office, clinic, health center or other site where individuals would typically go if they needed to seek medical attention (An et al., 2016; Carpenter et al., 2009). Overall, Lau et al. (2013) found that individuals ages 18-26, called young adults by the researchers, with a usual source of care were 52% more likely to receive a flu vaccine, 54% more likely to receive STD screening, 77% more likely to receive cholesterol screening, 52% more likely to receive diet counseling, and 59% more likely to receive exercise counseling than those without a usual source of care. This might mean that providing access for individuals to have a usual source of care is important for increasing receipt of preventive services for everyone, not just in racial and ethnic minorities (Corbie-Smith et al., 2002). Specifically, individuals 18-26, described as young adults by the research team, were seen by an emergency department significantly more than

adolescents for ambulatory health visits, specifically in young adult men (Callahan & Cooper, 2010). On the other hand, young adult females saw obstetricians/gynecologists more and received a higher proportion of visits for preventive care than young men as a result (Callahan & Cooper, 2010). This is speculated to be due to there being few guidelines for preventive health care for emerging adults besides those for reproductive and sexual care as the American Congress of Obstetricians and Gynecologists has recommendations for females ages 19-39 (Callahan & Cooper, 2010; Irwin, 2010; Ozer et al., 2012). Young adult men do not have the same specific reproductive and sexual preventive guidelines which could potentially contribute to less prevalent ambulatory and preventive care use due to this lack of specialization care for young adult males (Callahan & Cooper, 2010).

Additionally, having a primary care visit and usual source of care can be linked to increased preventive services in African Americans (Corbie-Smith et al., 2002; Fiscella & Holt, 2007). Racial and ethnic minorities over 65, who saw their primary care provider a fewer number of times and were less likely to receive preventive services than the white participants in a study (Fiscella & Holt, 2007). Hammond et al. (2010) found that being younger, having higher medical mistrust, having a lower income, being unmarried, and without an usual source of care were more likely to have a well visit, blood pressure screening and cholesterol screening delays in African American men. Therefore, this literature portrays that having an usual source of care is particularly important for emerging adults and African Americans populations. Another factor that is well studied in emerging adults and the Black community is insurance access. Both populations have been found to have low rates of insurance and thus low engagement in the healthcare system. Even though the ACA has assisted in increasing access and utilization of health services, barriers within insurance still exist.

The Affordable Care Act and the Influence of Insurance on Preventive Services. The passing of the ACA in 2010 expanded preventive services and dependence coverage up to age 26 by focusing on making health promotion and disease prevention more accessible and affordable (Luquis & Kensinger, 2017). The ACA required that all private health insurance plans provide preventive services without deductibles, copays, or coinsurance (Agirdas & Holding, 2018). Additionally, it required that private plans cover preventive services without cost sharing (Luquis & Kensinger, 2017). The preventive services that are included are recommended by the United States Preventive Service Task Force (USPSTF), Advisory Committee for Immunization Practices and Health Resources and Services Administration (Lau et al., 2014). Many emerging adults gained health insurance through the ACA as the uninsured rate decreased from 42% in 2010 to 36% in 2011 (Lau et al., 2014), partially due to emerging adults being able to stay on their parents or guardian's health insurance until 26 (Luquis & Kensinger, 2017). However, in 2019, 15.6% of young adults, ages 19-34, remain uninsured (Conway, 2020).

Overall, the literature shows that there was an increase in insurance coverage, health access and preventive services due to the ACA (Agirdas & Holding, 2018; DeVoe et al., 2018; Kotagal et al., 2014; VanGarde et al., 2018; Wallace & Sommers, 2015). Specifically, Lau et al. (2014) discovered that insurance coverage accounted for a significant increase in routine examinations as well as blood pressure screening, cholesterol screening and receipt of the flu vaccine in those with public insurance from 2009 to 2011 in individuals 18-25, called young adults by the researchers. This indicates that the expansion of insurance in the ACA specifically has increased the receipt of preventive services in young adults, hinting that insurance was and still potentially is a barrier to routine health examinations and other preventive services (Lau et al., 2014).

Other research has found that insurance has significantly factored into health care utilization and engagement for emerging adults but has been found to be inconsistent throughout some studies. Despite the significant increases seen especially within racial/ethnic minorities, lower income, and publicly insured individuals, fewer than 1 in 3 young adults, labeled as participants ages 18-25, had a routine health visit in 2014-2016 and less than 40% of those with private coverage had a well visit from 2014 to 2016 (Adams et al., 2019). This means that there are still many barriers for accessing check-ups and overall health care utilization for emerging adults. Additionally, this study examined whether well visit and preventive service rates changed because of increased health insurance coverage, and this was found not to be the case (Adams et al., 2019). Although increases in insurance coverage resulted in some initial gains in well visits and preventive services additional barriers need to be explored (Adams et al., 2019). A similar trend was found by Kotagal et al. (2014) who noted that health care coverage and health care utilization and engagement is complex because it depends on interest and ability to receive care as emerging adults may be more likely to not be interested in health care because they are typically healthier than older adults are. This literature indicates that insurance is an important factor when assessing utilization of healthcare in any population, especially in emerging adults. However, it does show that is not the sole barrier to this population and that other factors need to be explored in conjunction with insurance for Black emerging adults.

Preventive Service Use in the Black Population. Overall, Black individuals have been found in the literature to be less likely to receive many health services such as routine preventive care (Musa et al., 2009). However, in recent literature these numbers seem to vary and be inconsistent. Race was found to influence preventive care in Black emerging adults as some research shows that Black emerging adults have increased health service use. Black young

adults, identified as individual's ages 18-25, were more likely to report that they had a preventive visit in 2014 (Adams, Park, & Irwin, 2015). Additionally, Lau et al. (2013) found that from 2005 to 2007, receipt of STD screening, cholesterol screening, diet counseling, and emotion health screening differed by race/ethnicity but did not for flu vaccinations and exercise counseling. Black young adults, described by researchers as those 18-26 years old, were substantially more likely to receive STD testing, Latinx and Black individuals were more likely to get their cholesterol screened, and Latinx young adults were more likely to report receiving diet counseling than White young adults (Lau et al., 2013). Researchers speculated that this was because clinicians were more likely to require screening of racial and ethnic minorities due to their doctor's perception of their risk or belief that they had less access to resources for preventive health (Lau et al., 2013).

Next, one study found mixed results of how race affects preventive services. Musa et al. (2009) found that Black patients were less likely to report having a regular health care provider, receiving a flu vaccine, and having a PSA test. However, Black women were more than two times as likely to have a mammogram compared to White women (Musa et al., 2009). Yet, Musa and colleagues also found that there were no significant relationships between race, interpersonal and institutional trust, and preventive services (Musa et al., 2009). Finally, in two studies, race was found to not be associated at all with preventive services. Using data from the Behavioral Risk Factor Surveillance System from 2011-2014, race and ethnicity was found not to be a significant factor when examining receipt of a routine checkup in young adults or identified by the researchers as those ages 18-25 years old (DeVoe et al., 2018). In individuals with diabetes, Black and Hispanic individuals were more likely to utilize preventive services than White individuals however, those of lower social class and uninsured with diabetes were less likely to

receive preventive care, no matter their race and ethnicity (Oladele & Barnett, 2006). Although race and ethnicity has been studied as a factor influencing engagement with preventive services, most of the studies focused on older Black adults and those with chronic health conditions. To clear up some of the inconsistencies in previous findings, it would be important to investigate whether the developmental stage can account for some variability in research findings. A particular focus on emerging adults is needed as few studies have focused on barriers to engagement in preventive care among adults within this developmental period.

Emerging Adult Health and Preventive Services. Emerging adulthood is known for its higher rates of mortality, greater likelihood of engaging in unhealthy behaviors, and increase in chronic conditions (Graves et al., 2019; Irwin, 2010; Ozer et al., 2012). Young African Americans, ages 18-34, have been found to be living with chronic diseases more prevalent in older populations, such as high blood pressure, diabetes, and strokes, compared to young White adult's (CDC, 2017). It is extremely important to focus on emerging adult health as these unhealthy behaviors, such as poor diet, unprotected sex, lack of physical exercise, and substance abuse, can continue into adulthood and leave them susceptible and exposed to preventable illnesses, such as diabetes and cardiovascular and respiratory diseases (Lau et al., 2013). Additionally, many of these risky behaviors, such as physical inactivity, poor diet, and smoking, begin or become established in emerging adulthood (McCracken, Jiles, & Blanck, 2007).

Many studies have found that in comparison to adolescents, utilizing the terminology of the literature, young adults have worse health care access, are the most likely group to be uninsured, have worse perceptions of risk, high prevalence of risk behaviors, and fewer health care resources (Fortuna, Robbins, & Halterman, 2009; Graves et al., 2019; Neinstein & Irwin, 2013; Park et al., 2006). Speculated barriers of emerging adult health include changes in health

care providers, lack of specialization care for emerging adult males (unlike females who have an obstetrician/gynecologist, which is an important role in female's primary care), institutions and coverage, lack of opportunity to create long term relationships with healthcare providers and emerging adults' unique socio-demographic and social roles (Arnett, 2000; Callahan & Cooper, 2010; Irwin, 2010). Park et al. (2006) credits the issues and potential barriers to the prolonged transition to adult roles and responsibilities and the reduction of the safety net that assists adolescents and children (Arnett, 2000). Harris et al., (2006) and Park et al. (2014) conducted studies that examined longitudinal trends in health indicators from adolescence to young adulthood from 1994-2002 and 2005-2011, finding that in the transition from adolescence to emerging adulthood, there were significant increases in health risks, health barriers, and racial and ethnic health disparities, and found that little or no progress was made on these same key measures. Thus, emerging adults experience a particularly unique time in their life as they are susceptible and exposed to numerous health risks while attempting to navigate their newfound independence. To maintain emerging adults' health and prevent early illness and disease, barriers to preventive services need to be identified and measured to increase knowledge of chronic disease indicators, enhance early detection, and decrease the preventable deaths and morbidity among this community (Powell et al., 2019).

Health Care System Distrust. Health care system trust, or institutional trust, is a patient's trust in the medical profession, hospitals, insurers, health care organizations and systems (Schwei et al., 2014). Throughout the literature, there are many definitions and inconsistencies surrounding health care system distrust. Researchers believe this is due to the lack of clarity between physician distrust and health care system distrust, the focus of the literature on interpersonal trust, and the multidimensional nature of trust (Armstrong et al., 2008;

Jaiswal & Halkitis, 2019; Williams & Bigman, 2018). Due to this lack of clarity, it is not clear the exact difference between medical mistrust and health care system distrust. Sanford and Clifton (2022) describe medical mistrust as the degree to which individual mistrust the healthcare system, government health entities, medical scientists, and doctors and other health professionals. However, Armstrong et al. (2013) notes that medical mistrust was another form of health care system distrust that only focused on health care organizations. Additionally, Armstrong et al. (2006) said that other research has focused on more specific factors of the health care system such as mistrust of medical researchers, insurers, and/or hospitals, which still functions within the larger realm of institutional trust. Medical mistrust research has primarily focused on interpersonal trust in the relationship between patient and physician or trust in hospitals or organizations itself (Hall, 2006). The literature fails to address the broad effects of health care system distrust on the functions and outcomes of the system, specifically in preventive services (Armstrong et al., 2006; Whetten et al., 2006). Examining health care system distrust is extremely important as it could be the reason why a patient decides to seek care and enter a specific health care institution as well as develop a relationship with a physician who belongs to that institution (Schwei et al., 2014). Trust in the health care system allows individuals to trust health care professionals without knowing anything about them or the institution (Jacobs et al., 2011). Health care system trust is necessary because for an individual to engage with a provider, they must believe that the institution or overall health-care system will keep their best interest at heart and provide a safe environment for them (LaVeist, Nickerson, & Bowie, 2000; Schwei et al., 2014). Higher levels of institutional trust have been linked with better emergency room visits, enhanced acceptance and use of antiretroviral medication, greater willingness to donate organs, and an increased acceptance of the HPV vaccination (Schwei et al.,

2014). Lower levels of institutional trust are linked with higher likelihood to change doctors, decreased trust in physician's judgements, increased prevalence of seeking second opinions, greater misinformation of HIV/AIDS and decreased likelihood of organ donation (Jacobs et al., 2011).

Sources of Mistrust in the Health Care System. There are many sources that have contributed to medical mistrust and health care system distrust including medical abuse through experimentation, fears and anxieties surrounding potential genocides against the Black population, slavery, segregation and continued federally funded racist and discriminatory programs by the government (Dula, 1994). Previous research has named the Tuskegee Syphilis Study as the primary force driving medical mistrust despite historical discrimination and oppression that dates to slavery (Brandon, Isaac, & LaVeist, 2005; Jaiswal, 2019). Prior to Tuskegee, African Americans were used as subjects for dissection and medical experimentation (Gamble, 1997). During the civil war, Black Americans were very afraid of "night doctors". These were student doctors who would kidnap Black individuals in the middle of the night, kill them, and use their bodies as cadavers for experiments (Gamble, 1997). Despite the lack of evidence, African Americans were very afraid of night doctors due to their experiences as victims of medical experiments and White people spreading rumors of night doctors to maintain control (Gamble, 1997). The fear of genocide in the Black community extends past Tuskegee due to conspiracies surrounding HIV/AIDS, Sickle Cell anemia screening programs throughout the 1970s and involuntary sterilization of the 1960s (Dula, 1994; Gamble, 1997). The "Violence Initiative" in the 1990s, supported by the Department of Health and Human Services, was canceled due to African American professionals believing that the aim of the initiative was to identify violent Black children and chemically control them using medication (Dula, 1994).

These sources demonstrate that healthcare system distrust or medical mistrust is not just a characteristic of the Black community, but a phenomenon that is continually sustained and reinforced within the existing health care system (Jaiswal, 2019). Therefore, it is important to be aware of the many sources of distrust when studying the Black population to better understand the history behind the current inequalities this community faces and how to reduce distrust in the healthcare system overall.

Distrust as a Barrier to Medical Utilization and Engagement. Health care system distrust and medical mistrust have been identified as significant contributors to health disparities and barriers to health care utilization and engagement as they has been found to be negatively correlated with health promotion behaviors, health care utilization, health care satisfaction, management of chronic health conditions, continuity of care, seeking medical care, and trust in physician's (Armstrong et al., 2006; Jaiswal, 2019; Jaiswal & Halkitis, 2019; Williamson & Bigman, 2018). Specifically, African Americans have been found to report higher levels of medical mistrust and/or health care system distrust (Armstrong et al., 2008; Armstrong et al., 2013; Brandon, Isaac, & LaVeist, 2005; Cuevas, O'Brien & Saha, 2019; Halbert et al., 2009; Kinlock et al., 2017; LaVeist, Nickerson, & Bowie, 2000; Sutton et al., 2019; Whetten et al., 2006). This is seen in underutilization of health care services such as failure to take medical advice, keep a follow up appointment, fill a prescription and postponement or delays in seeking care (LaVeist, Isaac, & Williams, 2009). In participants with prostate cancer, Black men reporting higher levels of medical mistrust were associated with lower quality of life, social wellbeing, functional wellbeing, emotional wellbeing, and lessened relationship with their physician (Kinlock et al., 2017). In cardiac patients, African Americans had a higher prevalence of medical mistrust compared to other White participants in all the study measures including

believing that hospitals have done harmful experiments on patients without their knowledge, racial discrimination in a doctor's office is common, and that social class differences in treatment exist throughout hospitals (LaVeist, Nickerson, & Bowie, 2000). This literature shows that disparities within the Black community and health care utilization is well documented. However, there are gaps in the research as it has primarily focused on comparing the medical mistrust of Black to White populations, especially within those in the older population with chronic conditions. Additionally, some articles use health care system distrust interchangeably with or do not specify between medical mistrust and health care system distrust. Thus, the results of these studies can be hard to interpret for the overall health care system as the study mainly focuses on trust of one's own primary physician or trust in a medical organization. That is why it is necessary to focus on how distrust of the entire healthcare system influences services critical to good health in an, all Black, emerging adult sample.

Health care system distrust and medical mistrust have been examined in conjunction with racial centrality, perceived racism and discrimination, fatalism, self-efficacy, depression, social desirability, masculinity, racial segregation, and patient satisfaction (Arnett et al., 2016; Cuevas & O'Brien, 2019; Hammond, Matthews & Corbie-Smith, 2010; LaVeist, Nickerson, & Bowie, 2000; Powell et al., 2019; Randolph et al., 2020; Sutton et al., 2019). Insurance has been examined as a covariate in many of these studies but little to none to the researcher's knowledge has examined insurance coverage as a predictor or as a moderator in conjunction with health care system distrust. In relation to preventive health, health care system distrust and medical mistrust research has primarily focused on specific health knowledge and attitudes involving HPV, cervical cancer, colorectal cancer, mammograms, and prostate cancer (Adams et al., 2017; Hall et al., 2018; Kolar et al., 2015; Molina et al., 2015). Kolar et al. (2015) specifically examined

young racial and ethnic minorities, but outside of their study, there has been little to no research focusing on the emerging adult population, especially regarding the relationship between health care system distrust and preventive services. Furthermore, little research has examined the role of health care system distrust on engagement in care (Brenick et al., 2017). Previous literature has explored medical mistrusts connection to delays in routine health examination (Brenick et al., 2017; Eaton et al., 2015; Powell et al., 2019). Another study found that after accounting for medical mistrust, the racial disparity between Black and White individuals in residentially segregated areas using emergency departments over primary care sites disappears (Arnett et al., 2016). This is significant regarding prevention research as African Americans primary utilization of emergency departments and hospital outpatient departments could potentially hinder their access and exposure to preventive services (Arnett et al., 2016). Even though there is some exploration in the relationship between medical mistrust and preventive services, the overall influence of health care system distrust needs to be examined in emerging adults and how that translates to effect preventive service engagement through the healthcare system since little is known about what the barriers are for utilization and engagement of preventive services in emerging adults.

Sex Differences within Preventive Services. Researchers believe that sex differences between males and females exist due to lack of clinical guidelines for males as females, ages 19-39, have sexual and reproductive health recommendations from the American Congress of Obstetricians and Gynecologists (Ozer et al., 2012). Overall, young adult males, as labeled by the researchers, were found to use ambulatory medical care significantly less than females and other age groups in 19-24 year old's (Callahan & Cooper, 2010) and 20-29 year old's (Fortuna, Robbins, & Halterman, 2009). Specifically, young Black and Hispanic men access ambulatory

medical services significantly less and receive half the rate of care for chronic conditions in comparison to younger White men (Callahan & Cooper, 2010; Fortuna, Robbins, & Halterman, 2009). Most of the work assessing sex differences have focused on middle aged or older adults in the Black population (Hammond et al., 2010; Henderson, Madrigal, & Handler, 2020; Matthew, 2015; O'Malley et al., 2004). It is speculated that females significantly higher use of preventive services compared to males is due to females receiving their preventive care from obstetricians/gynecologists (Callahan & Cooper, 2010). However, it is important to assess this directly in a Black emerging adult population to better understand what influences their preventive service engagement.

Health Locus of Control. HLOC is an individual's sense of control over their own health in respect to their own beliefs and actions or because of external factors such as fate, chance, or other people (Plescia & Groblewski, 2004). Based on Rotter's social learning theory, Kenneth Wallston and colleagues created the multidimensional HLOC to investigate how individual's control beliefs over outcomes and behaviors affect their own health and health status (Schlenk & Hart, 1984; Wallston, 1992). Wallston's HLOC consists of three domains: internal orientation, external chance orientation and external powerful others orientation. Externalists consist of those who believe their health is controlled by luck, fate, or other people (Farid, Clark, & Williams, 1998). Specifically, those with a chance orientation are more influenced by luck or fate while those who fall under powerful others external orientation believe their health status is mostly affected by their friends, family, and health professionals.

Even though there has been recent inconsistencies to claims of defining health behaviors by orientation (Härkäpää et al., 1991; Janowski et al., 2013; Náfrádi, Nakamoto, & Schulz, 2017; Peltzer, 2001), those with an external orientation have been linked to many negative health

behaviors and outcomes such as an increased likelihood to have higher junk food consumption, depression, anxiety, stress, substance abuse, illness, and decreased quality of life (Brown et al., 2015; Gore, Griffin, & McNierney, 2016; Wong & Anitescu, 2017). Specifically, chance HLOC is associated with worse physical and mental health and reduced proactive health behaviors, such as lack of medication adherence (Grotz et al., 2011; Keedy et al., 2014; West, Borg Theuma, & Cordina, 2018). HLOC influence on preventive care engagement has not been extensively studied despite its previous connections to health behavior, including external HLOC's association with reduced proactive health behaviors. This could provide insight into why emerging adults do not pursue preventive services with health care system distrust.

Risk Perception. Risk perception can be considered the result of perceived likelihood and severity of a negative event (Chen, 2018). The notion of risk perception has been examined for its association with vaccination, STIs, substance use, alcohol consumption, smoking, and COVID-19 (Grevenstein, 2014; Yan et al., 2020). Perceived risk of health behaviors has been thoroughly studied in emerging adults, especially within college students (Khan et al., 2020). Khan and his colleagues found that 91% of the college students sampled were significantly perceived to have no, low, or moderate risk of developing diabetes in the future despite participating in unhealthy behaviors such as lack of physical activity and poor diet (2020). One study focusing on cardiovascular disease (CVD) found that Black HBCU students overall viewed themselves as low risk for developing CVD but did not indicate many healthy lifestyle behaviors, even though lifestyle changes are one of the best defenses against CVD (Robinson et al., 2019). Additionally, Hickey & Cleland (2013) found that in a female college sample, most of the participants did not perceive themselves as at risk for becoming infected with an STI, yet they reported low levels of condom usage.

It is important to continue to examine risk perception in emerging adults as individuals who believe themselves to be more susceptible to health conditions or injury, could potentially have higher preventive service outcomes to evade illness and gain better health (Robinson et al., 2019). Those who believe that they are less vulnerable to illness and disease may be less likely to change unhealthy behaviors, which could leave them predisposed to chronic conditions in the future (Robinson et al., 2019). As past literature has shown, emerging adults are less likely to engage in preventive care if barriers, such as lack of insurance access, exist. Therefore, it is important to investigate what factors contribute to these barriers, like risk perception, to fully conceptualize why emerging adults fail to use preventive services, despite high susceptibility to illness and injury.

Theoretical Framework

This study uses the Health Belief Model (HBM) framework to explore the psychological and social factors that impact Black emerging adults' utilization and engagement in preventive services in the healthcare system. Influenced by Kurt Lewin's theory of goal setting and other psychological and behavioral theories, the HBM was created to understand why individual's fail to use preventive services and screening tests to prevent disease and illness (Janz & Becker, 1984; Maiman & Becker, 1974; Rosenstock, 1974). It states that health-related behavior is based on the yearning to avoid getting sick and the belief that a specific action will prevent disease (Janz & Becker, 1984; Maiman & Becker, 1974; Rosenstock, 1974). HBM consists of six constructs: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cue to action and self-efficacy.

Perceived susceptibility addresses individuals perceived vulnerability to illness and disease. Previous studies have found that risk perception is related to participants' perceived

susceptibility as those lower in risk perception have been found to be more likely to participate in risky health behaviors, such as unprotected sex and poor diet (Hickey & Cleland, 2013; Khan et al., 2020). Perceived severity consists of an individual's perception of the seriousness of receiving an illness including medical and social consequences. Developmental period or age has been significantly related to perceived severity. Emerging adults could potentially have a lower perceived severity of health conditions as adolescents and emerging adults have been found to perceive seriousness of acquiring diseases, such as COVID-19 as low for themselves in comparison to others (Yan et al., 2020). Perceived benefits address an individual's belief in the successfulness of an intervention. Trust in the healthcare system could potentially serve as a perceived benefit as trust is one of many factors that has motivated participants to engage with providers and organizations as well as adhere to physician recommendations, such as to prescribed medications (Schwei et al., 2014). Perceived barriers consist of the negative factors that hinder an individual's feelings towards a behavior. Health care system distrust and insurance have been found to serve as barriers to preventive service engagement as in prior literature distrust has been linked to decreases in health care utilization and engagement (LaVeist, Isaac, & Williams, 2009) and insured individuals have had four times the rate of visits for preventive care services compared to uninsured individuals in young adults, individuals 20-29 labeled as such due to being a wider age range then emerging adults(Fortuna, Robbins, & Halterman, 2009). Cue to action consists of internal and/or external stimuli that triggers the individual to accept the health action. Having an usual source of care can serve as a cue to action as participants with a usual source of care have been found to have higher receipt of preventive services (Corbie-Smith et al., 2002; Lau et al., 2013). Additionally, females have been seen to have an increase in preventive services from their well woman visits with obstetricians/gynecologists as well as

reproductive and sexual care guidelines specifically outlined for females, serving as a potential cue to action. Self-efficacy examines an individual's confidence in themselves to carry out the health behavior (Janz & Becker, 1984; Maiman & Becker, 1974; Rosenstock, 1974; Rosenstock, Stretcher, & Becker, 1988). Having an external HLOC could serve as perceived health competency. Previous research has found these variables to be correlated, as well as conceptually related (Smith, Wallston, & Smith, 1995). Individuals who are externally oriented have also been seen to have low self-efficacy as they believe their health actions are determined by other people (Wong & Anitescu, 2017).

The HBM has examined preventive health, sick-role behaviors, and clinic utilization in past literature, including on influenza, screening behaviors, risk-factor behaviors, and physician visit for symptoms (Janz & Becker, 1984). Results of these studies showed significant associations between HBM constructs and flu vaccination behavior, performing breast self-examination in Black women, weight management among college students and promoting positive sleep behaviors (Janz & Becker, 1984). Specifically in college students, HBM has been used to examine sleep behavior, weight management, vaccine acceptance, risky sexual health practices like condom use, smoking, substance abuse, and HIV knowledge. One study was found that used the HBM model framework to investigate how interpersonal and institutional trust affected HPV vaccine intentions in college students (MacArthur, 2017). Furthermore, while the literature surrounding this framework has paid special attention to college undergraduates (Das & Evans, 2014; Ross, et al., 2010), it still lacks analyses in the emerging adults that are not in college, have graduated from college, and/or did not attend college at all. With the predictors of health care system distrust, the moderators of insurance and usual source of care, and the covariates of HLOC, sex assigned at birth, in-school status, and risk perception, this study will

attempt to examine and expand how these factors affect emerging adults' susceptibility to disease and perception of their ability to get sick as well as whether they act as barriers or aid to the receipt of preventive services through their intersecting relationships.

Purpose of Study

Previous research has examined preventive service utilization and engagement in middle aged and older populations, either comparing BIPOC populations to White patients, or solely looking at an older African American population. This is an important distinction because the preventive service recommendations change for individuals as they grow older, such as mammography, colorectal cancer screening and prostate-specific antigen test. Past research is currently unsure of barriers to access and engagement of these services among emerging adults. It is crucial to identify potential barriers to the current lack of engagement seen in the Black emerging adult population to design interventions to address and improve the reach of these services.

Health care system distrust has not been used as the main objective to explore preventive service in health care use (Jaiswal, 2019). Moreover, there has been little research dedicated to investigating the effects of health care system distrust overall (Armstrong et al., 2006). Instead, it has focused on specific factors of the healthcare system, such as mistrust of physicians, medical organizations, and hospitals (Armstrong et al., 2006). Thus, this study aims to use health care system distrust as a main objective to assess its influence on engagement in preventive services in the health care system in Black emerging adults.

Hypotheses. This study will explore the potential connection between health care system distrust and preventive service use (receipt of services) and engagement within the healthcare system (length of time since last routine health examination) in Black emerging adults. Insurance

will be used as a moderator due to prior research claiming it is a barrier to health engagement and utilization in this age group (Barbaresco, Courtemanche, & Qi, 2015). Usual source of care is significant to include as a moderator to see if Black emerging adults differ in rates of health care system distrust and preventive services. Past research has shown that there are many notable distinctions between females and males in both populations as obstetricians and gynecologists perform many preventive services for females, while Black young men continue to have the lowest ambulatory service and preventive service utilization as they receive their care primarily through emergency departments (Callahan & Cooper, 2010; Fortuna, Robbins, & Halterman, 2009). Thus, sex-assigned at birth will be analyzed as a covariate to account for additional variance that is not accounted for by usual source of care. In-school status will be used as a covariate because previous studies have found that the early ages of emerging adulthood have been more likely to have a routine check-up than those who were older, potentially due to in-school status and school insurance (DeVoe et al., 2018). HLOC will be used as a covariate due to prior research highlighting that African Americans have associated with an external orientation, which is linked with poorer health outcomes and worse quality of life. Finally, risk perception will be analyzed as a covariate due to emerging adults' high prevalence of risky health behaviors and worse perceptions of susceptibility to risk (Adams et al., 2019; Arnett, 2000; Callahan, 2012).

Hypothesis 1. There will be a main effect of health care system distrust on preventive services.

H1a. Health care system distrust will negatively predict receipt of preventive services. Higher health care system distrust will be associated with a lower amount of preventive services.

H1b. Health care system distrust will positively predict the length of time it's been since the last routine health check-up or physical exam. Higher health care system distrust will be associated with a longer amount of time since their last routine health examination.

Hypothesis 2. There will be a main effect of insurance coverage on preventive services.

H2a. Those without insurance coverage will report significantly fewer preventive services than those with insurance.

H2b. Those without insurance coverage will report a longer amount of time since their last routine health examination than those with insurance.

Hypothesis 3. There will be a main effect of usual sources of care on preventive services.

H3a. Those without an usual source of care will report significantly less receipt of preventive services than those with an usual source of care.

H3b. Those without an usual source of care will report a longer amount of time since their last routine health examination than those with an usual source of care.

Hypothesis 4. There will be a significant interaction between health care system distrust and insurance coverage.

H4a. Insurance will moderate this relationship as those with high health care system distrust and no insurance coverage will report lower receipt of preventive services. For those with low health care system distrust, we predict that insurance will not influence the relationship with receipt of preventive services.

H4b. Insurance will moderate this relationship as those with high health care system distrust and no insurance coverage will report a longer amount of time since their last routine health examination. For those with low health care system, we predict that insurance will not influence the relationship with routine health examination.

Hypothesis 5. There will be a significant interaction between health care system distrust and usual source of care.

H5a. An usual source of care will moderate this relationship as participants who do not have a usual source of care and have high health care system distrust will have low receipt of preventive services. For those with low health care system distrust, we predict that usual source of care will not influence the relationship with receipt of preventive services.

H5b. An usual source of care will moderate this relationship as participants who do not have a usual source of care and have high health care system distrust will report a longer amount of time since their last routine health examination. For those with low health care system distrust, we predict that usual source of care will not influence the relationship with routine health examinations.

Hypothesis 6. There will be a significant interaction between insurance status and usual source of care.

H6a. Participants with no usual source of care and no insurance coverage will report lower receipt of preventive services. Participants with a usual source of care and insurance coverage will report a higher receipt of preventive services.

H6b. Participants with no usual source of care and no insurance coverage will report a longer length of time since their last routine health examination. Participants with a usual source of care and insurance coverage will report a shorter amount of time since their last routine health examination.

Hypothesis 7. There will be a significant three way interaction between health care system distrust, insurance status and usual source of care.

H7a. Those without a usual source of care will have the lowest receipt of preventive services when they have no insurance and have high health care system distrust. Participants with no usual source of care but have insurance will still experience high health care system distrust and low receipt of preventive services. Respondents with a usual source of care and no insurance will experience high health care system distrust and low receipt of preventive services. Finally, participants with a usual source of care and insurance will not influence the relationship with preventive services.

H7b. Those without a usual source of care will have the longest time passed since their last routine health examination when they have no insurance and have high health care system distrust. Participants with no usual source of care but have insurance will still experience high health care system distrust and a longer length of time passed since their last routine health examination. Respondents with a usual source of care and no insurance will experience high health care system distrust and a longer length of time passed since their last routine health examination. Finally, participants with a usual source of care and insurance will not influence the relationship with routine health examinations.

Method

Participants

A power analysis for a linear regression for seven predictors was analyzed using G*Power software to determine the necessary sample size for the study (Foot et al., 2019). In the present study, assuming a small effect size (.065) as we were not able to obtain an effect size from prior research, 228 participants was deemed to be sufficient to detect an effect (power $\geq$ 0.8, alpha $\leq$ 0.05). However, to account for participant error and lazy responders, 20% was added to this sample for a total of 274 participants. Individuals could participate in this study if they

were between the ages of 18-26, identified as Black or African American, and were able to read and respond in English. This age range was selected as it is the age range for emerging adults (Arnett, 2000) and the cut-off for dependence coverage for the ACA being 26. The amount of college students was not limited as we expected community recruitment to be lower than those enrolled at a university. This study was approved through Virginia Commonwealth Universities Institutional Review Board (IRB).

To recruit this number of participants for this current study, Virginia Commonwealth Universities (VCU) SONA system, and community based recruitment was used. Fliers were posted throughout the Richmond community in areas where African American emerging adults congregate such public libraries, cafes, restaurants, clothing stores, as well as on social media. For participants who took the survey on SONA, .75 course credit was offered as an incentive for completing the study. For participants recruited through outreach on social media and throughout the community, 15 raffles of $25 dollars each was received after data collection.

Procedures

Once approval was received from the IRB, the survey was created in Qualtrics. Participants were allowed to register for the study through the SONA system or Qualtrics link. Participants were only allowed to proceed through the study after completing the informed consent and answering the eligibility questions. Consent was given by acknowledging participation in the study as no signature or name was required. The participants who accessed the survey through the community Qualtrics link were asked at the end of the survey if they wanted to be entered into a raffle to receive a $25 dollar gift card. Those who said yes were directed to a separate survey where they entered in their email. Participants could withdraw from

the study at any time, and they were not required to answer any questions. Once participants finished the survey, they were debriefed through an online information sheet shown after the last question. Participants from SONA were granted .75 SONA credits. Participants were de-identified for data analysis and data dissemination.

Materials and Measures

An online Qualtrics survey was distributed to participants who meet the inclusion criteria. The survey included questions from the following surveys.

Health Insurance Tracking Survey of Young Adults, 2011. To investigate young adult's experiences with health insurance and healthcare, the Health Insurance Tracking Survey of Young Adults, 2011 was be used (The Commonwealth Fund, 2011). Originally used in a national telephone survey, this 96-item questionnaire measured demographic information, education level, health access experiences, health insurance cost, transitions and coverage, medical debt, transitions from pediatric care to young adult care, health status, health behaviors including receipt of preventive services, health reform awareness, current employment status and financial situation (The Commonwealth Fund, 2011). Examples of these items include "In the last 12 months, was there ever a time when a health problem got worse because you delayed care?" and "Now thinking about your current main health insurance coverage, how would you rate it?" (The Commonwealth Fund, 2011). The current study will use 4 questions from the survey to investigate participant's insurance, usual source of care and preventive service engagement.

Revised Health Care System Distrust Scale. The Revised Health Care System Distrust scale examined individuals institutional/social forms of health care distrust, such as in the

healthcare system (Shea et al., 2008). The 9 statements in this scale use a 5-point response option ranging from “strongly agree” to “strongly disagree” (Shea et al., 2008). Examples of the items include “The Healthcare System covers up its mistakes” and “The Healthcare System gives excellent medical care” (Shea et al., 2008). Participant scores were computed by summing all the items. The scale could have a minimum score of 9 and a maximum score of 45. Participants who scored higher on the scale had greater health care system distrust. The scale was found to have a high internal consistency with an alpha of .85 (Shea et al., 2008). For this current study, the measure was found to have a Cronbach’s alpha of .87.

Multidimensional Health Locus of Control (MHLC) Scale. The MHLC was used to evaluate an individual’s beliefs on whether their health status is dictated by their own actions or external forces such as people, fate and/or a higher being (Wallston, 2004). The MHLC has three dimensions of health locus of control beliefs: internality, powerful others externality and chance externality (Wallston, Wallston, & DeVellis, 1978). Form A is an 18-item scale that will be used to assess general health beliefs. Each item was followed by a 6-point Likert scale, where it was ranked from “strongly disagree” to “strongly agree” (Wallston, Wallston, & DeVellis, 1978). The MHLC has been tested multiple times for its reliability and validity, receiving an average alpha of .70 and average test-retest reliability between .70-.90 (Wallston, 2004). Each subscale is summed to produce a final score. Higher scores in each subscale indicated a higher orientation. For this current study, the internal subscale received a Cronbach’s alpha of .66, the chance external received a .59, and the powerful others-external received a .67.

Perceived Risk of Getting Sick Scale. This study adapted questions from the Perceived Risk of HIV scale. Created by Napper, Fisher & Reynolds (2012), this original eight-item scale

was developed to measure multiple constructs of the perceived risk of HIV infection including likelihood estimates, intuitive feelings, and salience of and about the risk. We modified and selected four items including “I worry about my health overall”, “I am sure I will NOT get sick”, “I feel vulnerable to getting sick”, and “Getting sick is something I have …”. The response options include a 4-point Likert scale including “never thought about” to “thought about often” and 6-point Likert scale options, including “none of the time” to “all of the time” and “strongly disagree” to “strongly agree”. Ranging from a score of 4-21, these items are summed to get a final score. Higher scores indicated a greater risk perception of getting sick. This measure received a Cronbach’s alpha of .79 for this current study.

Trust in Physicians Scale. This measure examined an individual’s interpersonal trust with their own physician (Anderson & Dedrick, 1990). This is an 11 item scale that uses a 5-point Likert response ranging from “strongly disagree” to “strongly agree” (Anderson & Dedrick, 1990). Examples of this measure include “I doubt that my doctor really cares about me as a person” and “My doctor is usually considerate of my needs and puts them first” (Anderson & Dedrick, 1990). Participants are scored by summing all the items. Higher scores on the Trust in Physicians scale indicated higher trust in their own physician. The scale has a minimum score of 11 and a maximum of 55. This study was tested for its validity and reliability, receiving a Cronbach’s alpha of .90 and .85 (Anderson & Dedrick, 1990). For this current study, the measure was found to have a Cronbach’s alpha of .88.

Demographics. Demographics were collected at the beginning of the survey including age, sex-assigned at birth, school status, gender identity, income, employment, marital status, types of area they live in (urban, rural, suburb, small city), and if they make their own doctor’s appointments or not.

Statistical Analyses

To investigate the role of insurance and usual source of care on the relationship between health care system distrust and preventive service engagement in the healthcare system, two moderated moderations using Hayes' (2020) PROCESS macro were conducted in SPSS 27, to test study hypotheses. Main effects were observed on the outcome variables from the predictor variable, health care system distrust, and the two moderators, insurance and an usual source of care, accounting for the covariates, HLOC, risk perception, sex-assigned at birth and school status. The two moderators tested to see how they influence the predictor and outcome variable, health care system distrust and preventive services. Health care system distrust was examined using the average scores from the Revised Health Care System Distrust Scale. Preventive service use was analyzed from 2 modified items selected from the Health Insurance Tracking Survey of Young Adults, 2011. Outcome one assessed the last routine check-up or physical exam. Outcome two assessed preventive services engaged in the healthcare system including consultation from health care provider about the health risks of tobacco use, exercise/healthy diet and weight, emotional concerns, and risks associated with sexual activity, and receipt of blood pressure check, cholesterol screening, height/weight check, dental exam, and pap smear through a checklist. These models can be seen in Figures 1 and 2 in Appendix L and M.

Results

Participants

The final sample consisted of 329 participants collected from the SONA system and community recruitment. Of the total sample, only 32 were from community recruitment. All the participants identified as Black or African American. Furthermore, of the 9.8% of participants

that identified as having a Hispanic, Latinx, or Spanish ethnic background, most identified as either Puerto Rican (3.4%) or Central or South American (3.4%). The average year the respondents were born was 2001 and the average age of the sample was 19.30 (*SD* = 1.87). Most participants identified that their sex assigned at birth was female (83%). Most of the sample reported that a city best describes the type of area that they lived in (66.6%) with suburban area being the second highest (26.1%). Finally, majority of the sample was enrolled in a two or four year university (97.9%), identified that they lived in the same house as one or both of their parents (83.9%), and more than half reported that they made their own doctor's appointments (66.3%).

Majority of the participants indicated that they did have a usual source of care (88.4%) and that they received most of their care at a doctor's office (56.8%), urgent care center (16.1%), or community health center or clinic (9.1%). Most of the emerging adults received a routine health examination or physical exam within the past two years (85.2%) with a breakdown as the following: within the past 6 months (43.5%), 7 to less than 12 months ago (28%), and 1 to less than 2 years ago (13.7%). Only 9.7% of participants received all 7 of the preventive services listed in the survey including consultation from a health care provider about the health risks of tobacco use, exercise/healthy diet and weight, emotional concerns, and risks associated with sexual activity, and receipt of blood pressure check, cholesterol screening, height/weight check, dental exam, and cholesterol through a checklist. Please refer to Table 1 in Appendix I for a breakdown of all the preventive services screened and consulted for. Over 90% of the emerging adults in this sample identified that they had some sort of health insurance (92.1%). Most participants indicated that they either had a private health insurance plan that they bought or

someone else purchased for them (43.2%) or private health insurance offered through an employer or union (36.8%). Please see Table 2 in Appendix J for a breakdown of the types of insurance the participants have. The participants scored an average of 29.87 out of 45 (*SD* = 5.96) on health care system distrust indicating higher health care system distrust, a 9.82 out of 21 (*SD* = 3.43) on their perception of risk showing a lower perception of risk, and a 37.78 out of 55 (*SD* = 6.53) on their trust in physicians meaning a higher interpersonal trust in physicians. For the Multidimensional HLOC, participants scored a 26.16 out of 36 (*SD* = 4.03) on HLOC-Internal, a 19.80 out of 36 (*SD* = 4.93) on HLC-Powerful Others, and 19.95 out of 36 (*SD* = 4.57) on HLOC-Chance. The results of each subscale indicated the sample had a higher internal orientation overall.

Preliminary Analyses

All preliminary analyses and assumptions checks were conducted in IBM SPSS 27. Data was screened for potential bots, participants who completed the survey in too little time, participants who were not eligible for the study, and lazy responders. Participants were deemed ineligible and excluded from the study if they did not identify as Black or African American or were not between the ages of 18-26. Suspected bots were excluded from the study and included those whose longitude and latitude placed them in a body of water or outside the United States and those who did not pass the validity checks. Participants were considered time ineligible and excluded from the study if they completed the survey in under 10 minutes. We believe this was too little time to read and respond to all the questions in the survey. Before data was screened, there were a total of 315 participants recruited from SONA. After screening, 18 participants were deemed ineligible based on the following criteria: 4 did not pass the validity checks, 9 were time

ineligible, and 5 were lazy responders. Before data was screened, there was a total of 57 participants recruited from the community. After screening, 25 participants were deemed ineligible based on the following criteria: 2 did not pass the validity checks, 5 had repeat IP addresses, 6 were time ineligible, and 12 participants were screened out due to their longitude/latitude. In total, 43 participants were removed resulting in a total sample of 329. Before analysis, data were checked for univariate and multivariate normality, residual normality, linearity, homoscedasticity and multicollinearity. All assumptions were met.

Bivariate correlations were run to examine demographic information, predictors, moderators, and outcome variables. These results can be found in Table 3 in Appendix K. Many significant correlations were found. Insurance was found to be associated with trust in physicians ($r(327) = .12$, $p = .03$) and usual source of care ($r(327) = -.15$, $p = .01$). When participants noted they had some sort of insurance, their trust in physicians increased. Furthermore, respondents who had a usual source of care were more likely to have some sort of insurance. The count of preventive services received was found to be associated with HLOC – powerful others ($r(327) = .25$, $p < .001$), age ($r(327) = -.15$, $p = .01$), and routine health examinations ($r(327) = -.25$, $p < .001$). This indicates that participants who were younger, those with a higher powerful others orientation, and respondents who had a longer length of time since receiving their last routine health examination had a lower amount of preventive services. Health care system distrust was associated with trust in physician ($r(327) = -.49$, $p < .001$), HLOC – powerful others ($r(327) = -.30$, $p < .001$), HLOC – internal ($r(327) = -.13$, $p = .02$), age ($r(327) = .150$, $p = .01$), and sex ($r(327) = .14$, $p = .01$). These correlations show that respondents with higher trust in physicians, those with higher powerful others orientation, those with higher internal orientation, those who

were older, and males had lower health care system distrust. Usual source of care was found to be associated with trust in physician ($r(327) = -.12$, $p = .03$), HLOC – powerful others ($r(327) = -.14$, $p = .01$), and routine health examinations ($r(327) = .33$, $p < .001$). This means that those with a usual source of care had higher trust in their physician, higher powerful others orientation, and the least amount of time since their last routine health examination. Additionally, routine health examinations were associated with trust in physicians ($r(327) = -.20$, $p < .001$). This indicates that participants who had lower trust in physicians had a longer amount of time since their last routine health examination. Finally in terms of demographics, scheduling one's own doctors' appointments was associated with age ($r(327) = .30$, $p < .001$) and sex ($r(327) = .30$, $p = .02$). This means those who were older were more likely to make their own doctor's appointments and males were more likely to make their own doctors' appointments.

Main Effects and Interactions

Hayes' (2020) PROCESS macro in SPSS 27 was used to conduct two moderated moderations to examine the effect of insurance status and usual source of care on the relationship between health care system distrust and preventive service engagement and receipt. The first moderation examined the relationship with health care system distrust and routine health examinations. The second moderation analyzed the relationship between health care system distrust and preventive service receipt.

(H1-H3): We predicted that there would be three main effects of health care system distrust, insurance status, and usual source of care on both routine health care examinations and preventive service receipt. These hypotheses were not supported. For the routine health examination outcome, no significant main effects of health care system distrust ($b = -.26$, $p =$

.20), insurance status (b = -1.01, p = .34), and usual source of care (b = .99, p = .22) were found. For the preventive service receipt outcome, no significant main effects for health care system distrust (b = -.05, p = .86), insurance status (b = 1.86, p = .23), and usual source of care (b = .61, p = .60) were found.

(H4): We predicted that insurance status would significantly moderate the relationship between health care system distrust and our two outcomes, routine health care examinations and preventive service receipt. Our hypotheses were not supported. Insurance status did not moderate the health care system distrust and routine examination relationship (b = .21, p = .31) nor the health care system distrust and receipt of preventive services relationship (b = -.14, p = .64).

(H5): We also predicted that participants usual source of care would significantly moderate the relation between health care system distrust and our two outcomes. For routine health examinations, usual source of care did not moderate the predictor outcome relationship (b = .10, p = .08). For receipt of preventive services, usual source of care did not moderate the predictor outcome relationship (b = .10, p = .55).

(H6): We predicted that insurance status and usual source of care would interact to influence our outcomes of routine health examinations and preventive service receipt. There was not a significant interaction in the routine health examination relationship (b = .53, p = .53) nor preventive service receipt (b = -1.14, p =.36).

(H7): We predicted that the moderating role of insurance status on the relationship between health care system distrust and routine health examination would depend on the usual source of care. We also predicted the moderating role of insurance status on the relationship between health care system distrust and preventive service receipt would depend on the usual

source of care. Our hypotheses were not significant as there was not a significant three way interaction between health care system distrust, insurance status and usual source of care on routine health examinations, b = -.05, p = .78 or preventive service receipt, b = -.33, p = .21. The results of the two moderated moderations can be found in Table 4 and Table 5 in Appendix N and O.

Additional Analyses

Based off the correlations, we decided to investigate trust in physicians as a moderator instead of insurance status. Thus, we conducted another two moderated moderations. The first one examined how trust in physicians and usual source of care affected the relationship between health care system distrust and routine health examinations. The second examined how trust in physicians and usual source of care affected the relationship between health care system distrust and preventive service receipt. For both analyses, age, insurance status, HLOC-chance, and making one's own doctors' appointments were used as covariates based off the correlations. Before running the analyses, the trust in physician variable was checked for all assumptions. One univariate outlier was found but not deleted as it was within the range of the trust in physician's scale.

Routine Health Examination Model. The results of this moderated moderation can be found in Table 6 in Appendix P. There was a main effect of usual source of care on routine health examinations, b = 1.66, p < .001. Participants who had a usual source of care had a lower length of time since their last routine health examination. Additionally, two significant interactions were found. There was a significant two way interaction between health care system distrust and trust in physician on routine health examinations, b = -.02, p = .03. This interaction

shows participants with a high trust in their physician and low health care system distrust, had the least amount of time since their last routine health examination. There was a marginally significant three way interaction between health care system distrust, trust in physician and usual source of care on routine health examinations, b = .01, p = .07. This interaction is shown in Figure 3 in Appendix R. When a participant had a usual source of care and high trust in physician, those with higher health care system distrust had shorter amounts of time since their last routine health examination, b = -.04, p = .02. When a participant had a usual source of care and low trust in their physician, there was no significant effect on the relationship between health care system distrust and routine health examinations, b = .01, p = .50. When respondents did not have a usual source of care and high trust in their physician, there was not a significant effect on the relationship between health care system distrust and routine health examinations, b = .16, p = .08. However, there is a noticeable direction that those with higher health care system distrust have longer amounts of time since having a routine health examination. Finally, when respondents did not have a usual source of care and low trust in their physician, there was not a significant effect on the relationship between health care system distrust and routine health examinations, b = .02, p = .68.

Preventive Service Receipt Model. The results of this moderated moderation can be found in Table 7 in Appendix Q. There were two significant main effects. Health care system distrust had a significant main effect on preventive service receipt, b = .20, p = .04, and usual source of care had a significant main effect on preventive service receipt, b = -.96, p = .03. These results show that those with higher health care system distrust had a higher receipt of preventive services. Participants with no usual source of care had a lower receipt of preventive services.

Additionally, we had three significant interactions. There was a marginally significant two way interaction between health care system distrust and trust in physician on preventive service receipt, b = .02, p = .06. There was another significant two way interaction between health care system distrust and usual source of care on preventive service receipt, b = -.21, p = .02. This relationship showed that those with no usual source of care and higher health care system distrust had lower preventive service receipt. Finally, there was a significant three way interaction between health care system distrust, trust in physician, and usual source of care on preventive service receipt, b = -.03, p = .03. This interaction is shown in Figure 4 in Appendix S. When a participant did not have usual source of care and high trust in physician, those with higher health care system distrust had lower preventive services received, b = .14, p = .00. When respondents did not have a usual source of care and low trust in their physician, there was not a significant effect on the relationship between health care system distrust and preventive service receipt, b = .09, p = .70. When participants had a usual source of care and high trust in their physician, there was not a significant effect on the relationship between health care system distrust and preventive service receipt, b = .03, p = .63. Finally, when respondents had a usual source of care and low trust in their physician, there was not a significant effect on the relationship between health care system distrust and preventive service receipt, b = .03, p = .86.

Discussion

This study aimed to highlight the importance of investigating systemic barriers to health engagement and utilization in Black emerging adults. It explored how usual source of care and insurance status influence the relationship between health care system distrust and preventive service receipt and engagement. Guided by the health belief model, we intended to understand

how factors can affect emerging adults' perception of their ability to engage in preventive care and whether these factors act as barriers or facilitators of receipt of preventive services. We believed our covariates of risk perception, sex, and HLOC were crucial to the model as they could serve as the perceived susceptibility, cue to action, and self-efficacy, respectfully. We hypothesized that insurance status and usual source of care would significantly moderate the relationships between health care system distrust on both preventive service receipt and routine health examinations. None of the hypotheses were supported, even when considering our covariates of HLOC, risk perception, sex, and school status. The lack of effects of the insurance status is surprising as distrust of the health care system has been found to be associated with insurance coverage in Black populations (Armstrong et al.,2006). However, the difference might be that our study looks at the difference between having no insurance and some sort of insurance coverage compared to analyzing the effects of the different types of insurance coverage such as private versus public. We believe we may have seen different results if we broke down the various sources of care that were used. Future research should examine the difference between those who use urgent care centers or the emergency room department versus those whose usual source of care is their doctor's office. This is because a relationship with the health care system or provider is not needed to access these sources. Overall, this indicates that these factors do not work together to influence the relationship between health care system distrust and preventive service receipt and engagement in our sample. Furthermore, it shows that there are other variables that may contribute to this relationship given past research and correlations.

Based off the significant correlations, we conducted two more moderated moderations analyzing how trust in provider and usual source of care influence the relationship between

health care system distrust and preventive service receipt and length of time since last routine health examination. For the routine health examination analyses, there was a main effect of usual source of care. This research indicates that participants with a usual source of care had a more recent routine health examination. This finding is consistent with previous research as having a usual source of care has found to be related to increased preventive services, including a routine health examination or primary care visit in both emerging adults and Black individuals (Corbie-Smith et al., 2002; Fiscella & Holt, 2007; Lau et al., 2013). There was a significant relationship between health care system distrust and trust in physicians on routine health examinations. This moderation signifies Black emerging adults with high trust in their own physician and low health care system distrust, had the least amount of time since their last routine health examination. This is not consistent with previous literature as in HIV negative Black men who have sex with men, only global medical mistrust was found to be associated with greater time passed since their last physical examination and not trust in provider (Eaton et al., 2015). However, Armstrong et al. (2006) was able to find a similar inverse relationship between distrust of the health care system and trust in one's primary physician in a sample comparing White participants to racial/ethnic minority participants. This specific relationship between trust in their own physician and health care system distrust has not been explicitly explored before in Black emerging adults alone. Finally, there was a marginal effect of the moderator's trust in physician and usual source of care on health care system distrust and routine health examinations. When participants had a usual source of care and high trust in their physician, they reported a more recent routine health examination when they had higher health care system distrust compared to those who had lower health care system distrust. These findings suggest that having a quality, trusting, relationship

with your own physician increases the likelihood that Black emerging adults will go to the doctor despite having distrust in the overall health care system. Although this relationship has not been explored to the knowledge of the researchers, this adds to the literature that Black emerging adults will engage with health services if they have a trusted provider and source of care. Furthermore, if one has trust in their provider, they may be more likely to have a usual source of care if the patient continues to return to see their provider for their primary care. Even though these results are only marginally significant, there are possible implications for understanding preventive service care and utilization among Black emerging adults as they do not have specific preventive recommendations for their age group. Interventions focused on improving health engagement in Black emerging adults may benefit from advertising a trusting relationship with one's providers as trust will get people who do not have many experiences with the health care system, such as emerging adults, to engage with care. This is important as the Black community has continued to face historical and current oppression that affects their perception of the health care system each day. It is difficult to create interventions focused solely on decreasing health care system distrust overall when the literature shows that there are more proximal factors that influence engagement in the Black community, including trust in provider. The trust in their own physician is what brings individuals to engage and use health services. Thus, it is important to determine afro-centric and cultural appropriate interventions that revolve around trust in physicians for Black emerging adults. This is because they are going to have some of their first individual experiences with the health care system and these interventions would hopefully help them maintain these preventive actions through their bond with their physician. Black emerging adult's connection with their physician is crucial based on the Black communities shared cultural

values of unity and shared decision-making. Future research should explore the moderating role of trust in physicians in Black emerging adults as the results may be marginal due to the high rate at which participants had a usual source of care.

For the preventive service analyses, there was a main effect of health care system distrust. Participants who had higher health care system distrust had higher receipt of preventive services. This is not in line with previous literature as higher medical mistrust was associated with higher odds of delaying routine checkups and blood pressure screenings in African American men (Powell et al., 2019). We speculate that our participants still received higher receipts of preventive services due to their high rates of routine health examinations, where most individuals receive their preventive services. There was also a significant main effect of usual source of care. These results indicate that those with a usual source of care have higher preventive service receipt. Our analyses additionally found that usual source of care moderated the relationship between health care system distrust and preventive service receipt. This relationship shows that those with no usual source of care and low health care system distrust have higher preventive service receipt than those with high health care system distrust. This is a novel finding as usual source of care has been explored in relation to trust in physician but not as much to health care system distrust, especially in the emerging adult demographic. This significantly adds to the literature as we know that having a usual source of care increases emerging adults' likelihood of attaining preventive services. Our study shows that having no usual source of care affects the relationship between health care system distrust and preventive service receipt while having a usual source of care has no significant effect on the relationship. Lastly, our results indicated that usual source of care and trust in physicians moderated the relationship between health care

system distrust and preventive service receipt. Having a usual source of care did not influence the relationship between health care system distrust and preventive service receipt. The significant results highlighted that having no usual source of care and high trust in their physician resulted in a higher receipt of preventive services when their health care system distrust was low compared to those with high health care system distrust. Our research strongly implies that even if a Black emerging adult does not have a usual source of care, trust in physician works together to attenuate the relationship between health care system distrust and preventive service receipt. These results are important as they indicate that Black emerging adults are willing to seek preventive service receipt, especially if they are trusting of their own physician. There may be other factors such as transportation and other barriers to access, that may prevent an emerging adult from having a usual source of care.

These additional analyses incorporating trust in physician into the model align with the literature. Trust in providers was significantly associated with the use of preventative services in African American women (O'Malley et al., 2004). Furthermore, Bogart et al. (2021) studied medical mistrust in relation to COVID-19 vaccine and treatment hesitancy. The participants were Black individuals who were currently living with HIV. The results of the study showed that despite high levels of mistrust and vaccine hesitancy, the respondents had a greater trust in their provider than the government (Bogart et al., 2021). The authors suggest that provider-led interventions might be beneficial to address COVID-19 related distrust health consequences (Bogart et al., 2021). This gives insight into our study as it provides evidence for a supporting relationship between health care system distrust and trust in physician. Some research suggests that good "patient-physician" relationships in African American men might involve less medical

mistrust in general (Hammond et al., 2010). Additionally, another study showed that in a sample of Black and White individuals, participants who reported increased health care system distrust also indicated greater mistrust toward physicians (Cuevas, O'Brien, & Saha, 2019). Thus, this study shows that being more trustful of health care providers or the overall system leads to better quality and potentially more trusting patient-provider relationships. Kennedy, Mathis, & Woods (2007) recommend that building a trusting relationship with their own doctor would translate into decreasing suspicion and mistrust of the health care system and Black individuals taking an increased role in their health care decision making as a result. Thus, this research further supports our study's findings that trust in provider influences health care system distrust and that this is a relationship that needs to be continually explored in the Black emerging adult population. Overall, our study adds significantly to the literature as it explores the influence of usual source of care and trust in physician on the relationship between health care system distrust and both routine health examination and preventive service receipt. These relationships have not been explored in this way to the known knowledge of the researchers. This research provides important implications on how to design programs and interventions for Black emerging adults, an underserved and under-researched population. With these results, we can further investigate how the role of physicians in knowledge of preventive care and source of care can increase the utilization and engagement of health services as well as improve health outcomes in Black emerging adults.

Limitations

Although the present study results support that health care system distrust is another barrier to health care utilization and engagement in Black emerging adults, it is important to

recognize potential limitations. First, in future studies, the way insurance status was collected should differ. As found in Appendix A, to measure insurance, the researchers asked “Think about the health insurance you currently have that helps pay for the cost of healthcare. Are you personally covered by….”? The question then consists of responses options with various types of insurance. We found that participants were selecting more than one type of insurance. Now even though being covered by more than one type of insurance is possible, some participants were selecting upwards of three or four options. We could not differentiate if these were lazy responders or if this was an issue of health insurance literacy. Additionally, one of the last response options to select was “No health insurance”. This is a double negative, which the researchers did not realize until after data collection closed.

The next limitation to discuss is the lack of representation of emerging adults not in college versus those in college. The data was primarily collected in Richmond, Virginia where it is surrounded by many large universities. One of the issues with emerging adulthood is that researchers often do not study emerging adults who do not attend college (Arnett, 2000). Arnett suggests that this is because college students are easy to find while those who are not in school are not as reachable through any institutional setting (2000). Therefore, it is important to capture the experiences of emerging adults in college and in the community to understand emerging adult preventive services use. This is especially important as those in college may have health insurance through that institution and/or may be able to access preventive services easier due to their college’s health and wellness center. Second, despite the researchers attempt to hang up fliers in a variety of areas outside the downtown area, we suspect that data being collected during the COVID-19 pandemic affected engagement with the fliers. Future research should hopefully be able to do more in-person community engaged research to target emerging adults outside of

college to understand their health and barriers to health engagement and utilization. Finally, there was also a lack of representation in terms of emerging adults who do not have health insurance. Although it is positive to see that majority of emerging adults in our sample reporting that they have insurance coverage, this is just not representative to the nation as we know that emerging adults have had low access to insurance even with taking the Affordable Care Act into consideration. We believe that this may be due to the high rate of students in our sample indicating that they have insurance through their college institution or their parents. Furthermore, the data being primarily collected in Richmond speaks to a geographic limitation of the study. Since most of the sample is primarily from the South, these results may not be generalizable to Black emerging adults from different regions of the United States. Health resources, access, and policies vary region by region, so it is important to have a geographical representation of the United States reflected in a future sample.

Finally, the researchers would like to note that a cross-sectional design was used. This means causal conclusions cannot be made, only associations. The results only portray a snapshot in time of when the data was collected. The results cannot be interpreted to reflect current times and potentially any current changes made to health policy. Furthermore, this data was collected during the COVID-19 pandemic and did not address any potential associations with mental health and access to health services outside of a university wellness/student health center. Due to the COVID-19 pandemic, we also believe that is why we saw such a high rate of participants who lived with their parents in our sample. Additionally, COVID-19 could have influenced their routine health care as there was an increase in accessibility of tele-health services for those with insurance and internet access.

Future Research

Much work remains to be done before a full understanding of the extent of how health care system distrust, trust in physician, and usual source of care work together to influence preventive service receipt and engagement in Black emerging adults. One of these studies most important contributions is raising a variety of intriguing questions for future studies. First, it would be useful to extend the current findings by examining insurance access and usual source of care compared by their specific status or place of care and analyzed for these outcomes. Second, since our sample did not find significance in school enrollment, future research should explore a sample with a higher number of emerging adults outside of school. This is important because college offers students various resources that they might not be able to attain outside of school. This includes health insurance, a health/wellness center, programming dedicated towards increasing wellness and health maintenance, and trusted faculty/staff an emerging adult could speak to about potential health issues. It also would be interesting to investigate a sample with emerging adults who have graduated versus not graduated college. This could add to the literature as future researchers could analyze whether programming dedicated towards health engagement and utilization in college has had a long term effect on health behaviors post-graduation.

Additionally, our sample shows that our participants had higher health care system distrust but not as high compared to other research with older African Americans. We suggest that potentially exploring emerging adult parents' health care system distrust as well as their conceptualization of health in general could account for our findings. This is because research has shown that parents can influence adolescent and college student's health behaviors. In adolescents, their parents' own health behaviors were found to be positively and strongly

associated with their child's healthy and unhealthy food intake, physical activity, and non-school related screen time (Nakamura et al., 2022). In college students, perceived parental approval was found to be associated with alcohol use, procedures to change their alcohol use, and health consequences such as being hungover or passing out (Rulison et al., 2015). Thus, we would be interested in analyzing if parents' health care system distrust and perceptions of health matched with emerging adults' health care system distrust and health behaviors. This would be an interesting factor as research has suggested that racial socialization methods have increased health and wellness in Black youth and adolescents. Black adolescent girls and young women experience many challenges regarding their race and gender, resulting in disproportionate effects to their well-being (Wallace & Wilchins, 2013). Studies have found that parents negative gendered racial socialization messages have shown increases in Black adolescent girl's depression, anxiety and stress (Winchester et al., 2021). This same study found that parents who used gendered racial socialization messages of pride and empowerment have seen a decrease in the relationship between internalized gendered racial oppression and psychological well-being in Black adolescent girls (Winchester et al., 2021). Thus, we speculate that this same positive messaging can be used in terms of health engagement as Black adolescents and emerging adults could learn how to use these practices to use the health care system to maintain their health. This is especially important for emerging adults because Black culture emphasizes story-telling and sharing positive and/or negative experiences. Making adolescents aware of the misgivings of the health care system while teaching them how to positively navigate it while Black through messages of pride and empowerment could influence overall engagement. Future research should use the same theoretical and practical implications and apply it to Black emerging adult's health

to explore how parental health care system distrust translates to Black emerging adult health seeking and willingness to engage in health services.

Furthermore, despite high rates of routine health examinations, only 9.7% of participants received all 7 of the preventive services listed in the survey. All 7 preventive services are recommended by the United States Preventive Services Taskforce (USPSTF) for individuals ages 18 and up. Future research should examine providers knowledge of recommendations and which ones they prioritize during routine health examinations or well visits. It is suspected that well visits are a main way that emerging adults receive their preventive services. This reflects the challenges emerging adults face due to the transition from adolescence to emerging adulthood. Very strict perceptions of the USPSTF and emerging adult health status has caused research to stray away from focusing on preventive health services for emerging adults and focus instead on middle aged and older adults. Providers, no matter the specialty, do not have a specific guide for emerging adult health needs to refer to when assisting emerging adults, which potentially leads to gaps in preventive services for these individuals when they do seek medical care. This lack of preventive health care guidelines speaks to the disparity within age based care and how overlooked emerging adults are. This is where insurance comes into play as well as even if a provider may want to screen an emerging adult for various illnesses, they may reject it due to having to pay because of a lack of insurance coverage.

In terms of insurance status, our limitations speak to how our study could have surveyed insurance access better. However, this is a significant limitation as it uncovers that future research needs to explore health insurance literacy. This is especially important for emerging adults as they may not understand insurance terminology especially if they are under their

parent's insurance, if their parents still make their doctor's appointments, and/or if their parents still attend those visits with them. Additionally, emerging adults still have some of the worst access to care due to being some of the highest rates of age groups being uninsured, despite the Affordable Care Act. This is especially important as these rates are even lower for Black emerging adults. This study showed that health care system distrust and insurance status may not interact together to produce the engagement and utilization of health services in a mostly college sample during COVID-19. There are other factors that may influence insurance and may be the reason why emerging adults are not accessing health care services. Further studies need to explore insurance status in connection to health literacy and perceptions of health insurance as well as other potential barriers to health in Black emerging adults such as transportation, and race-concordant providers. These results should also be explored in a non-college sample as we anticipate more variability in insurance status that could influence the results.

Our sample's additional analyses identified some demographics that should be explored in additional studies. Future research should delve more into continuum of age and how that affects health care system distrust and preventive service use and engagement. Age has been explored in previous research as Wong et al. (2015) found that in an emerging adult sample of 19-25 year old's, those who were 19-22 and who had a usual source of care were more likely to have a routine health visit than those who were 23-25. Age also has been seen to have significant relationships with health care system distrust. Armstrong et al. (2006) identifies that distrust of the health care system was more common and associated with age as it was highest among participants who were between the ages of 31-60. This portrays those younger emerging adults may have less contact with the health care system and be less likely to have had negative

experiences (Armstrong et al., 2006). Research could explore emerging adults in two groups: 18-21 and 22-26. These groups were chosen as this would be another way to examine if school enrollment influences emerging adult health or not as these are the traditional ages emerging adults spend in college and graduate from college. This could be crucial as younger emerging adults may still rely on their parents and/or college in terms of maintaining their routine health care, insurance, and access to health services. On the other hand, this would confine the sample to those who have attended school and thus limit the experiences of emerging adults who may not have access to the same resources such as a school health center.

Another recommendation for additional research is to further define connections between trust in personal provider, usual source of care, and health care system in relation to prevention. This research shows that usual source of care had opposing effects in the outcomes. Having a usual source of care, paired with high trust in their physician and high health care system distrust, resulted in more recent routine health examinations. However, having a usual source of care and trust in physician did not affect the relationship between health care system distrust and preventive service receipt. The relationship was only significant when participants had no usual source of care and high trust in their physician. This could be due to the difference in who initiates each action; The emerging adult initiates going to the routine health examination while the provider initiates what services are received or are not received. We suspect this also may be because preventive services can be received not just in a primary care or routine health visit, but subsequent research should explore this difference.

Although the results of the current work help elucidate how structural factors influence engagement in health, it does not highlight what environmental factors facilitate engagement.

Factors such as living situation, peer influence, and school status need to be further explored as main predictors. As emerging adults have less engagement with routine healthcare, it is important to explore factors that positively influences health engagement. One such factor is peer influence. Developmentally, peer influence is an important motivator for emerging adults due to their search for social identity and sense of belonging (Erikson, 1968). Research has found that peers are some of the most powerful motivators for health promoting behaviors, such as exercise and weight loss (Gruber, 2008), and risky behaviors, such as alcohol consumption, more than factors such as religion, gender and parental attitudes (Perkins, 2002). Thus, it is important to examine how peers affect emerging adults' health engagement. Positive peer influence through encouragement has been related to exercise, pursuit of healthy eating practices, and observation of their weight (Gruber, 2008). Healthy behaviors promoted and strengthened by peer relationships can establish the foundation for engaging in health promotion throughout adulthood, where chronic conditions are extremely prevalent. Researchers note that the relationship between systematic barriers and health care engagement is dependent on emerging adults' interest and ability to receive said health care (Kotagal et al., 2014). Peer influence could encourage their interest in seeking health services and provide resources for health services. Environmental factors, such as college and dorm living, where emerging adults are surrounded by peers, coupled with university health services and school health insurance being more accessible, could enhance the peer influence of attitudes and use of health services. School enrollment status and living with parents were found to moderate the relationship between emerging adults' peer pressure and substance abuse as those in school and living away from their parents produced higher rates of risk behavior when exposed to negative peer pressure (Keyzers,

Lee & Dworkin, 2020). Moreover, peer influence has been thought to be more significant in "peer-intensive" environments, such as college, where students do not live with their parents (Perkins, 2002). This has mostly been looked at in terms of negative risk factors for behaviors such as substance use and sexual risk behaviors in college students. This shows a gap in the literature as college students are heavily studied in accordance with peer influence due to having more opportunities for social events where alcohol and drug use happens (Keyzers, Lee, & Dworkin, 2020). However, emerging adults outside of academia are not recruited. To produce representative research, researchers need to collect data on emerging adults who did not attend college and those who have already graduated from college.

Conclusion

Overall, this study examined if insurance status and usual source of care moderated the relationship between health care system distrust and preventive service engagement and receipt. Despite our hypotheses not being significant, our additional analyses suggest other factors may be important when considering health care system distrust including trust in physician. Our study contributes to the existing emergent adult literature as it gives a recent examination into their preventive service usage and engagement. This is important as it is done in an all-Black sample, a known sub-population of emerging adults that experiences worse access and outcomes to care compared to other emerging adult races/ethnicities. Furthermore, it is one of the few studies to explore health care system distrust as a barrier to health engagement and utilization in emerging adults. These variables are assessed in a population that has a high rate of insurance access, usual source of care, and current routine health examinations. This varies from other studies that focus on comparing races/ethnicities as well those with a specific focus on communities with specific

chronic conditions. Despite the high engagement and utilization of preventive services, this study still adds a needed glance into emerging adult health, especially Black health. It supports prior literature of how having a usual source of care increases participants likelihood of attaining a routine health examination and adds to it as not having a usual source of care increases preventive service receipt. Interventions should target increasing Black emerging adults' usual source of care to increase health access and health outcomes. Overall, our studies additional analyses highlight how considering usual source of care and trust in physician when examining the relationship between health care system distrust and engagement in prevention, especially when looking at receipt in prevention services. Previous studies have not explored the connection between usual source of care, trust in physician's and health care system distrust, so our study represents some of the first direct demonstration of its importance. This research can lend to further interventions and programming focusing on targeting health care system distrust through interpersonal trust and usual source of care status. Even though Black emerging adults are young and have lower health care system distrust, this study strongly argues that this should not be overlooked in emerging adults and should be incorporated into developing further culturally competent health communication and recommendations when serving the Black emerging adult population.

Appendix A: Selected Questions from the Health Insurance Tracking Survey of Young Adults, 2011 (Modified)

1. Is there one doctor's group, health center, or clinic you usually go to for most of your medical care? Please do not include the hospital emergency room.
    - Yes, I have a usual place for medical care (1)
    - No, I do not have a usual place for medical care (2)
2. Think about the health insurance you currently have that helps pay for the cost of healthcare/ Are you personally covered by?
    - Private health insurance offered through an employer or union (1)
    - Health insurance offered through your college or university (2)
    - A private health insurance plan that you bought yourself or someone else purchased for you (3)
    - Medicaid or some other type of state medical assistance for low-income people (4)
    - Medicare, the government program that pays health care bills for some disabled people (5)
    - Insurance offered to you because you are in the military or are a veteran (6)
    - Health insurance through any other source. (7)
    - No health insurance (8)
3. When did you last have a routine check-up or physical exam?
    - Within the past 6 months (1)
    - 7 to less than 12 months ago (2)
    - 1 to less than 2 years ago (3)
    - 2 to less than 3 years ago (4)
    - 3 or more years ago (5)
    - Don't know (8)
4. Please check whether in the past year, doctors or other health professionals talked to you about or screened you for following things:
    - Exercise and having a healthy diet and weight
    - Any emotional concerns (for example, depression, relationship problems, violence/bullying or stress)
    - Reducing risks associated with sexual activity
    - Your blood pressure
    - A dental exam
    - Your height and weight (in the past three years)
    - Your cholesterol

Appendix B: Revised Health Care System Distrust Scale

"By Health Care System I mean hospitals, community clinics, and labs as well as organizations involved in health such as insurance companies and drug companies. I am not including people such as doctors, nurses, specialists, x-ray technicians, medicines, or office staff. I am just talking about the organizations that are a part of your health care."

1. The Health Care System does its best to make patients' health better.* (C)
   - Strongly disagree (1)
   - Disagree (2)
   - Neutral (3)
   - Agree (4)
   - Strongly agree (5)
2. The Health Care System covers up its mistakes. (V)
   - Strongly disagree (1)
   - Disagree (2)
   - Neutral (3)
   - Agree (4)
   - Strongly agree (5)
3. Patients receive high quality medical care from the Health Care System.* (C)
   - Strongly disagree (1)
   - Disagree (2)
   - Neutral (3)
   - Agree (4)
   - Strongly agree (5)
4. The Health Care System makes too many mistakes. (C)
   - Strongly disagree (1)
   - Disagree (2)
   - Neutral (3)
   - Agree (4)
   - Strongly agree (5)
5. The Health Care System puts making money above patients' needs (V)
   - Strongly disagree (1)
   - Disagree (2)
   - Neutral (3)
   - Agree (4)
   - Strongly agree (5)
6. The Health Care System gives excellent medical care.* (C)
   - Strongly disagree (1)
   - Disagree (2)
   - Neutral (3)
   - Agree (4)
   - Strongly agree (5)
7. Patients get the same medical treatment from the Health Care System, no matter what the patient's race or ethnicity is.* (V)
   - Strongly disagree (1)
   - Disagree (2)
   - Neutral (3)
   - Agree (4)
   - Strongly agree (5)

8. The Health Care System lies to make money. (V)
    - Strongly disagree (1)
    - Disagree (2)
    - Neutral (3)
    - Agree (4)
    - Strongly agree (5)
9. The Health Care System experiments on patients without them knowing. (V)
    - Strongly disagree (1)
    - Disagree (2)
    - Neutral (3)
    - Agree (4)
    - Strongly agree (5)

Scoring:

- Reverse code for * items
- Measured by the sum of the 9 items.
    - Subscales
        i. C = Competence
        ii. V = Value congruence
    3. Ranging from 9-45, with higher scores indicating higher health care system distrust.

Appendix C: Multidimensional Health Locus of Control Form A

1. If I get sick, it is my own behavior which determines how soon I get well again.
   - Strongly disagree (1)
   - Moderately disagree (2)
   - Slightly disagree (3)
   - Slightly agree (4)
   - Moderately agree (5)
   - Strongly agree (6)
2. No matter what I do, if I am going to get sick, I will get sick.
   - Strongly disagree (1)
   - Moderately disagree (2)
   - Slightly disagree (3)
   - Slightly agree (4)
   - Moderately agree (5)
   - Strongly agree (6)
3. Having regular contact with my physician is the best way for me to avoid illness.
   - Strongly disagree (1)
   - Moderately disagree (2)
   - Slightly disagree (3)
   - Slightly agree (4)
   - Moderately agree (5)
   - Strongly agree (6)
4. Most things that affect my health happen to me by accident.
   - Strongly disagree (1)
   - Moderately disagree (2)
   - Slightly disagree (3)
   - Slightly agree (4)
   - Moderately agree (5)
   - Strongly agree (6)
5. Whenever I don't feel well, I should consult a medically trained professional.
   - Strongly disagree (1)
   - Moderately disagree (2)
   - Slightly disagree (3)
   - Slightly agree (4)
   - Moderately agree (5)
   - Strongly agree (6)
6. I am in control of my health.
   - Strongly disagree (1)
   - Moderately disagree (2)
   - Slightly disagree (3)
   - Slightly agree (4)
   - Moderately agree (5)
   - Strongly agree (6)
7. My family has a lot to do with my becoming sick or staying healthy.
   - Strongly disagree (1)
   - Moderately disagree (2)
   - Slightly disagree (3)
   - Slightly agree (4)
   - Moderately agree (5)

- Strongly agree (6)

8. When I get sick, I am to blame.
   - Strongly disagree (1)
   - Moderately disagree (2)
   - Slightly disagree (3)
   - Slightly agree (4)
   - Moderately agree (5)
   - Strongly agree (6)
9. Luck plays a big part in determining how soon I will recover from an illness.
   - Strongly disagree (1)
   - Moderately disagree (2)
   - Slightly disagree (3)
   - Slightly agree (4)
   - Moderately agree (5)
   - Strongly agree (6)
10. Health professionals control my health.
    - Strongly disagree (1)
    - Moderately disagree (2)
    - Slightly disagree (3)
    - Slightly agree (4)
    - Moderately agree (5)
    - Strongly agree (6)
11. My good health is largely a matter of good fortune.
    - Strongly disagree (1)
    - Moderately disagree (2)
    - Slightly disagree (3)
    - Slightly agree (4)
    - Moderately agree (5)
    - Strongly agree (6)
12. The main thing which affects my health is what I do.
    - Strongly disagree (1)
    - Moderately disagree (2)
    - Slightly disagree (3)
    - Slightly agree (4)
    - Moderately agree (5)
    - Strongly agree (6)
13. If I take care of myself, I can avoid illness.
    - Strongly disagree (1)
    - Moderately disagree (2)
    - Slightly disagree (3)
    - Slightly agree (4)
    - Moderately agree (5)
    - Strongly agree (6)
14. Whenever I recover from an illness, it's usually because other people (for my example, doctors, nurses, family, friends) have been taking good care of me.
    - Strongly disagree (1)
    - Moderately disagree (2)
    - Slightly disagree (3)
    - Slightly agree (4)
    - Moderately agree (5)

- Strongly agree (6)

15. No matter what I do, I'm likely to get sick.
    - Strongly disagree (1)
    - Moderately disagree (2)
    - Slightly disagree (3)
    - Slightly agree (4)
    - Moderately agree (5)
    - Strongly agree (6)
16. If it's meant to be, I will stay healthy.
    - Strongly disagree (1)
    - Moderately disagree (2)
    - Slightly disagree (3)
    - Slightly agree (4)
    - Moderately agree (5)
    - Strongly agree (6)
17. If I take the right actions, I can stay healthy.
    - Strongly disagree (1)
    - Moderately disagree (2)
    - Slightly disagree (3)
    - Slightly agree (4)
    - Moderately agree (5)
    - Strongly agree (6)
18. Regarding my health, I can only do what my doctor tells me to do.
    - Strongly disagree (1)
    - Moderately disagree (2)
    - Slightly disagree (3)
    - Slightly agree (4)
    - Moderately agree (5)
    - Strongly agree (6)

Scoring:

- Measured by the sum of the 12 items.
    - Subscales
        - Internal: items 1, 6, 8, 12, 13, 17
        - Chance External: items 2, 4, 9, 11, 15, 16
        - Powerful Others: items 3, 5, 7, 10, 14, 18
    - Ranging from 6-36 for each subscale. Higher scores in each subscale indicate a higher orientation.

Appendix D: Perception of Risk (Created by Researchers)

1. How worried are you about your overall health?
    - Not worried at all (1)
    - Slightly worried (2)
    - Somewhat worried (3)
    - Worried (4)
    - Very worried (5)
2. How worried are you about getting sick?
    - Not worried at all (1)
    - Slightly worried (2)
    - Somewhat worried (3)
    - Worried (4)
    - Very worried (5)
3. How vulnerable do you feel to getting sick?
    - Not vulnerable at all (1)
    - Slightly vulnerable (2)
    - Somewhat vulnerable (3)
    - Vulnerable(4)
    - Very vulnerable (5)
4. Do you believe you are at direct risk of getting sick?
    - Strongly disagree (1)
    - Disagree (2)
    - Neutral (3)
    - Agree (4)
    - Strongly Agree (5)

Scoring:

- Measured by the sum of the four items.
- Ranging from 4-21, with higher scores indicating greater risk perception

Appendix E: Perception of Racial Discrimination

Personal-Level

1. I experience discrimination because of my race.
   - Strongly disagree (1)
   - Disagree (2)
   - Somewhat disagree (3)
   - Neutral (4)
   - Somewhat Agree (5)
   - Agree (6)
   - Strongly agree (7)
2. I feel that I am discriminated against because of my race.
   - Strongly disagree (1)
   - Disagree (2)
   - Somewhat disagree (3)
   - Neutral (4)
   - Somewhat Agree (5)
   - Agree (6)
   - Strongly agree (7)
3. I feel like I am personally a victim of society because of my race.
   - Strongly disagree (1)
   - Disagree (2)
   - Somewhat disagree (3)
   - Neutral (4)
   - Somewhat Agree (5)
   - Agree (6)
   - Strongly agree (7)
4. I consider myself a person who is deprived of opportunities that available to others because of my race.
   - Strongly disagree (1)
   - Disagree (2)
   - Somewhat disagree (3)
   - Neutral (4)
   - Somewhat Agree (5)
   - Agree (6)
   - Strongly agree (7)
5. I personally have been a victim of racial discrimination.
   - Strongly disagree (1)
   - Disagree (2)
   - Somewhat disagree (3)
   - Neutral (4)
   - Somewhat Agree (5)
   - Agree (6)
   - Strongly agree (7)

Group-Level

6. Other members of my race experience discrimination.
   - Strongly disagree (1)

- Disagree (2)
- Somewhat disagree (3)
- Neutral (4)
- Somewhat Agree (5)
- Agree (6)
- Strongly agree (7)

7. My racial group is discriminated against.
    - Strongly disagree (1)
    - Disagree (2)
    - Somewhat disagree (3)
    - Neutral (4)
    - Somewhat Agree (5)
    - Agree (6)
    - Strongly agree (7)
8. My racial group has been victimized by society.
    - Strongly disagree (1)
    - Disagree (2)
    - Somewhat disagree (3)
    - Neutral (4)
    - Somewhat Agree (5)
    - Agree (6)
    - Strongly agree (7)

Scoring

- Measured by separate sums of personal-level and group level.
- Higher ratings indicated greater discrimination.

Appendix F: Trust in Physicians Scale

1. I doubt that my doctor really cares about me as a person*
    a. Strongly Disagree (1)
    b. Disagree (2)
    c. Neutral (3)
    d. Agree (4)
    e. Strongly Agree (5)
2. My doctor is usually considerate of my needs and puts them first
    a. Strongly Disagree (1)
    b. Disagree (2)
    c. Neutral (3)
    d. Agree (4)
    e. Strongly Agree (5)
3. I trust my doctor so much that I always try to follow his/her advice.
    a. Strongly Disagree (1)
    b. Disagree (2)
    c. Neutral (3)
    d. Agree (4)
    e. Strongly Agree (5)
4. If my doctor tells me something is so, then it must be true
    a. Strongly Disagree (1)
    b. Disagree (2)
    c. Neutral (3)
    d. Agree (4)
    e. Strongly Agree (5)
5. I sometimes distrust my doctor's opinion and would like a second one*
    a. Strongly Disagree (1)
    b. Disagree (2)
    c. Neutral (3)
    d. Agree (4)
    e. Strongly Agree (5)
6. I trust my doctor's judgement about my medical care
    a. Strongly Disagree (1)
    b. Disagree (2)
    c. Neutral (3)
    d. Agree (4)
    e. Strongly Agree (5)
7. I feel my doctor does not do everything he/she should for my medical care*
    a. Strongly Disagree (1)
    b. Disagree (2)
    c. Neutral (3)
    d. Agree (4)
    e. Strongly Agree (5)

8. I trust my doctor to put my medical needs above all other considerations when treating my medical problems.
    a. Strongly Disagree (1)
    b. Disagree (2)
    c. Neutral (3)
    d. Agree (4)
    e. Strongly Agree (5)
9. My doctor is a real expert in taking care of medical problems like mine.
    a. Strongly Disagree (1)
    b. Disagree (2)
    c. Neutral (3)
    d. Agree (4)
    e. Strongly Agree (5)
10. I trust my doctor to tell me if a mistake was made about my treatment.
    a. Strongly Disagree (1)
    b. Disagree (2)
    c. Neutral (3)
    d. Agree (4)
    e. Strongly Agree (5)
11. I sometimes worry that my doctor may not keep the information we discuss totally private.*
    a. Strongly Disagree (1)
    b. Disagree (2)
    c. Neutral (3)
    d. Agree (4)
    e. Strongly Agree (5)

Scoring:

- *Indicated negatively-worded items for **REVERSE score items 1, 5, 7, 11**
- **Measured by the SUM of items 1-11**
- Higher scores indicate higher trust

Appendix G: Demographics

1. I am ____ years old
    - 18
    - 19
    - 20
    - 21
    - 22
    - 23
    - 24
    - 25
    - 26
2. What was your sex assigned at birth?
    - Male (1)
    - Female (2)
    - Prefer not to disclose (3)
3. Do you identify as transgender?
    - Yes (1)
    - No (2)
    - Prefer not to disclose (3)
4. Gender identity: (Please select all that apply)
    - Agender (1)
    - Genderqueer or genderfluid (2)
    - Non-binary (3)
    - Questioning or unsure (4)
    - Man (5)
    - Woman (6)
    - Prefer not to disclose (7)
    - Other gender identity:_____
5. Are you currently enrolled in a two or four year university?
    - Yes (1)
    - No (2)
6. If yes, do you have remote classes or in-person classes due to COVID-19?
    - Remote (1)
    - In-person (2)
    - Mixed or hybrid (3)
7. If yes, has COVID-19 impacted your access and use of student health services?
    - Yes (1)
    - No (2)
8. Do you utilize tele-health visits?
    - Yes (1)
    - No (2)
9. Are you currently employed?
    - Yes (1)
    - No (2)
10. Is your income
    - Less than $10,000 (1)
    - $10,000 – under $20,000 (2)
    - $20,000 – under $30,000 (3)
    - $30,000 – under $40,000 (4)

- $40,000 – under $50,000 (5)
- $50,000 – under $60,000 (6)
- $60,000 – under $80,000 (7)
- $80,000 – under $100,000 (8)
- $100,000 – under $120,000 (9)
- $120,000 or more (10)
- Don’t know (11)

11. Are you married?
    - Yes (1)
    - No (2)
12. Which of the following best describes the place where you now live?
    - A city (1)
    - A suburban area (2)
    - A small town (3)
    - A rural area (4)

Appendix H: Health Information

1. In the last 12 months, was there any time when you did any of the following because of cost?
    - Did not fill a prescription for medicine or skipped medication because of cost?
        - Yes (1)
        - No (2)
    - Skipped a medical test, treatment or follow-up recommended by a doctor because of cost
        - Yes (1)
        - No (2)
    - Had a medical problem but did not go to a doctor or clinic because of cost?
        - Yes (1)
        - No (2)
    - Did not see a specialist when you or your doctor thought you needed one because of cost?
        - Yes (1)
        - No (2)
    - Delayed or did not get needed dental care because of cost
        - Yes (1)
        - No (2)
2. In the last 12 months, was there any time when you had a medical problem but did not go to a doctor or clinic because of difficulties in scheduling?
    - Yes (1)
    - No (2)
3. Please indicate if you have any of the following:
    - Asthma and Allergies (1)
    - Birth defects (such as cleft lip, heart defects, spina bifida) (2)
    - Blindness/vision loss (3)
    - Cancer (such as breast, ovarian, colon, prostate) (4)
    - Deafness/hearing loss at a young age (5)
    - Developmental delay/learning disorders (6)
    - Diabetes/sugar disease (7)
    - Heart disease (8)
    - High blood pressure (9)
    - High cholesterol (10)
    - History of surgeries (11)
    - Mental health disorders (such as depression, schizophrenia) (12)
    - Obesity (13)
    - Pregnancy complications (14)
    - Stroke (15)
    - Substance Abuse disorder (16)
    - Not applicable/ Don’t know (17)
4. Please indicate if your family members have any of the following:
    - Alzheimer’s Disease (1)
    - Asthma and Allergies (2)
    - Birth defects (such as cleft lip, heart defects, spina bifida) (3)
    - Blindness/vision loss (4)
    - Cancer (such as breast, ovarian, colon, prostate) (5)
    - Deafness/hearing loss at a young age (6)
    - Developmental delay/learning disorders (7)
    - Diabetes/sugar disease (8)

- Heart disease (9)
- High blood pressure (10)
- High cholesterol (11)
- History of surgeries (12)
- Mental health disorders (such as depression, schizophrenia) (13)
- Obesity (14)
- Pregnancy complications (15)
- Stroke (16)
- Substance Abuse disorder (17)
- Not applicable/ Don't know (18)

5. If you have a chronic condition, do you need physician and/or medical professional assistance with management of your chronic condition?
    - Yes (1)
    - No (2)
6. Do you make your own doctor's appointments?
    - Yes (1)
    - No (2)
7. If not, who does?
    - Parents and/or guardian (1)
    - Spouse or significant other (2)
    - Other (3)
8. Have you received a pap smear in the past three years (females only)?
    - Yes (1)
    - No (2)
9. Do you smoke?
    - Yes (1)
    - No (2)
10. If yes, has a physician or health professional spoken to you about the health risk associated with tobacco and ways to quit within the last year?
    - Yes (1)
    - No (2)

Appendix I

Table 1. The percentage of preventive services reported to have been checked or screened for.

Preventive Service Checked or Screened For	Percentage Received
Exercise and having a healthy diet and weight counseling	50.8%
Any Emotional concerns (for example, depression, relationship problems, violence/bullying or stress)	53.5%
Reducing Risks Associated with Sexual Activity	33.4%
Blood Pressure	38.6%
A dental exam	50.2%
Height and weight	59%
Cholesterol	26.4%

Appendix J

Table 2. The percentage of type of insurance reported.

Type of Insurance	Percentage of those who indicated they are covered by one or more of the following
Private health insurance offered through an employer or union	36.8%
Health Insurance offered through your college or university	17.9%
Private Health Insurance plan that you bought yourself or someone else purchased for you	43.2%
Medicaid or some other type of state medical assistance for low-income people	28%
Medicare, the government program that pays health care bills for some disabled people	12.2%
Insurance offered to you because you are in the military or are a veteran	15.8%
Health Insurance through any other source	24.3%

Appendix K

Table 3. Means, standard deviations, and correlations of predictor, moderator, outcome and demographic variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Insurance Status	--													
2. Preventive Services Received	.10	--												
3. Routine Health Examination	-.10	-.25**	--											
4. Usual Source of Care	.15**	-.11	.33**	--										
5. Health Care System Distrust	.03	-.10	-.02	.00	--									
6. Trust in Physician	.12*	.10	-.20**	-.12*	-.49*	--								
7. Perception of Risk	.07	.06	.04	-.07	.00	-.05	--							
8. HLOC-Chance	-.02	.09	.05	-.02	-.01	-.06	.23**	--						
9. HLOC-Internal	-.01	.04	-.02	.02	-.13*	.17*	-.11*	.05	--					
10. HLOC-Powerful Others	.01	.25**	-.09	-.14*	-.30**	.27**	.25**	.21**	.04	--				
11. Age	-.07	-.15**	-.07	-.01	.15**	.03	-.17**	.01	.04	-.18**	--			
12. Sex	.03	-.07	-.04	-.02	.14**	-.00	-.03	-.07	-.04	-.04	.40**	--		
13. College Enrollment	.04	.11	.02	.08	-.06	.02	-.01	-.17**	-.08	.01	-.35**	-.15**	--	
14. Making Own Doctor's Appointments	.00	-.05	.04	.02	.02	.09	-.05	-.07	.00	.06	.30**	.13*	-.06	--
Mean		3.11	2.20		29.87	37.78	9.82	19.95	26.16	19.80	19.30			
SD		2.21	1.52		5.99	6.53	3.43	4.57	4.03	4.93	1.87			

Note. Insurance Status 0 = No Health Insurance, 1 = Some Sort of Health Insurance. Usual Source of Care 1 = Yes, 2 = No. Sex 1 = Male, 2 = Female, College Enrollment 1 = Yes, 2 = No, Making Own Doctor's Appointments 1 = Yes, 2 = No. * p <.05, ** p <.001.

Appendix L

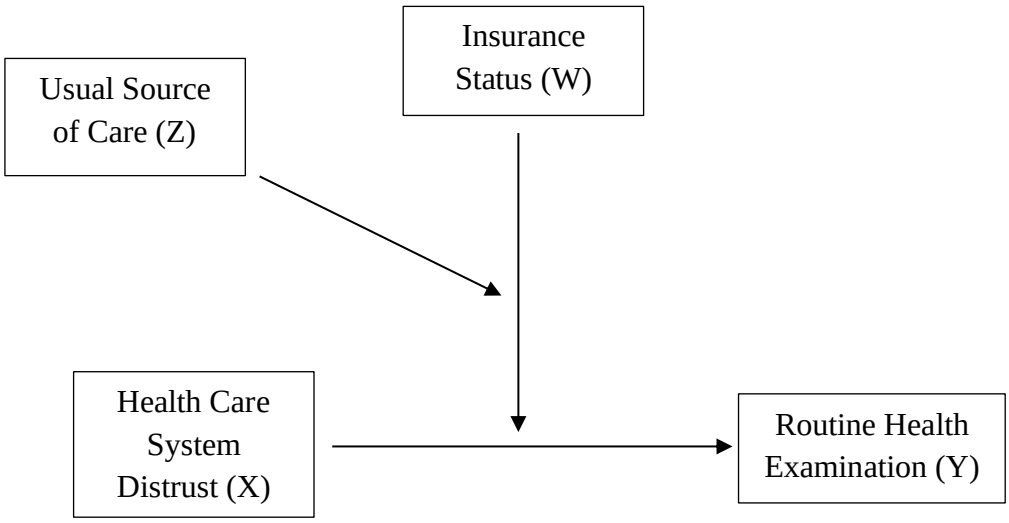

Figure 1. This figure shows the first moderate moderation that was conducted with insurance status and usual source of care influencing the relationship between health care system distrust and routine health examinations.

Appendix M

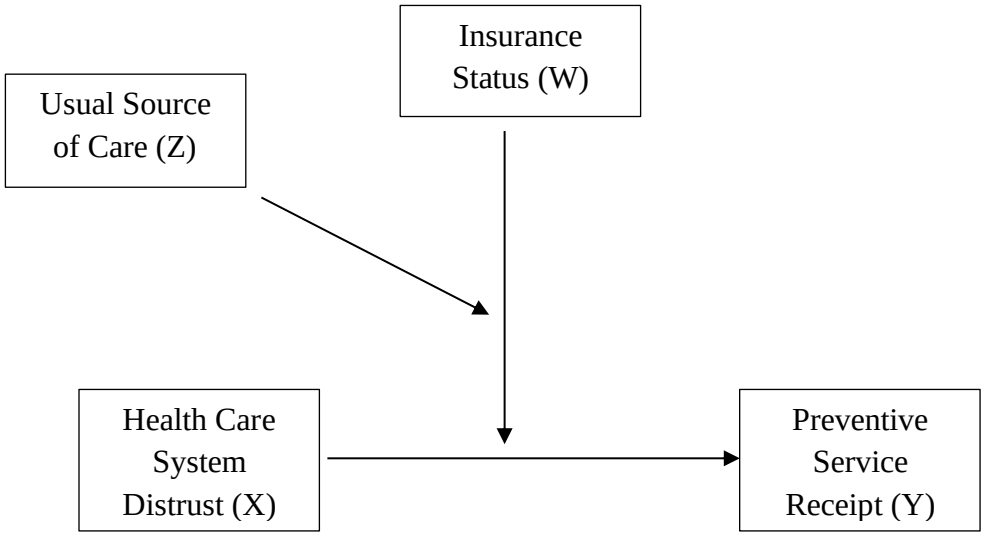

Figure 2. This figure shows the first moderate moderation that was conducted with insurance status and usual source of care influencing the relationship between health care system distrust and preventive service receipt.

Appendix N

Table 4. Moderation analysis predicting routine health examinations from health care system distrust, insurance status, and usual source of care.

	b	*SE*	*t*	*p*
Constant	1.26	1.57	.80	.42
Main effects				
HCSD	-.25	.20	-1.29	.20
Insurance	-1.01	1.06	-.95	.34
USOC	.99	.80	1.24	.22
Covariates				
HLOC- Internal	.00	.02	.14	.89
HLOC- Chance	.02	.02	1.00	.32
HLOC-Powerful Others	-.02	.02	-1.30	.20
Perception of Risk	.03	.03	1.28	.20
Sex	-.12	.21	-.55	.58
College Enrollment	.15	.58	.26	.79
Interaction effects				
HCSD x Insurance	.21	.21	1.02	.31
HCSD x USOC	0.10	0.17	0.59	.56
Insurance x USOC	0.53	0.84	0.63	.53
HCSD x Insurance x USOC	-.05	0.18	-0.28	.78

Note: R^2 = .15, HCSD = Health Care System Distrust, USOC = Usual Source of Care

Appendix O

Table 5. Moderation analysis predicting preventive service receipt from health care system distrust, insurance status, and usual source of care.

	b	*SE*	*t*	*p*
Constant	-2.17	2.30	-.94	.35
Main effects				
HCSD	-.05	0.29	-.18	.86
Insurance	1.87	1.55	1.20	.23
USOC	.61	1.17	0.52	.60
Covariates				
HLOC- Internal	.00	.03	.11	.91
HLOC- Chance	.04	.03	1.32	.19
HLOC-Powerful Others	.11	.03	4.04	.00
Perception of Risk	-.01	.04	-.24	.81
Sex	-.20	.31	-.66	.51
College Enrollment	1.54	.85	1.82	.07
Interaction effects		.		
HCSD x Insurance	-.14	.31	.47	.64
HCSD x USOC	.22	.25	0.89	.37
Insurance x USOC	-1.14	1.24	-0.92	.36
HCSD x Insurance x USOC	-.33	0.26	-1.25	.21

Note: R^2 = .12, HCSD = Health Care System Distrust, USOC = Usual Source of Care

Appendix P

Table 6. Moderation analysis predicting routine health examinations from health care system distrust, trust in physicians, and usual source of care.

	b	*SE*	*t*	*p*
Constant	133.78	89.76	1.49	.13
Main effects				
HCSD	-.12	.07	-1.77	.08
TIP	-.07	.07	-.88	.38
USOC	1.67	.28	5.93	.00**
Covariates				
Age	-.07	.04	-1.49	.14
Insurance Status	-.29	.32	-.93	.35
HLOC - Chance	.02	.02	1.21	.23
Doctor's Appointments	.35	.18	1.96	.05
Interaction effects				
HCSD x TIP	-.02	.01	-2.22	.03*
HCSD x USOC	.10	.06	1.74	.08
TIP x USOC	.02	.07	.28	.78
HCSD x TIP x USOC	.01	.01	1.84	.07

Note: R^2 = .18, HCSD = Health Care System Distrust, USOC = Usual Source of Care, TIP = Trust in Physician's. * $p < .05$, ** $p < .001$.

Appendix Q

Table 7. Moderation analysis predicting preventive service receipt from health care system distrust, trust in physicians, and usual source of care.

	b	*SE*	*t*	*p*
Constant	334.82	136.97	2.44	.02*
Main effects				
HCSD	.20	.10	2.05	.04*
TIP	.07	.11	.59	.55
USOC	-.965	.43	-2.25	.03*
Covariates				
Age	-.17	.07	-2.42	.02*
Insurance Status	.51	.48	1.06	.29
HLOC - Chance	.05	.03	1.74	.08
Doctor's Appointments	-.02	.27	-.06	.95
Interaction effects				
HCSD x TIP	.02	.01	1.91	.06
HCSD x USOC	-.21	.09	-2.31	.02*
TIP x USOC	-.03	.10	-.29	.77
HCSD x TIP x USOC	-.02	.01	-2.16	.03*

Note: R^2 = .08, HCSD = Health Care System Distrust, USOC = Usual Source of Care, TIP = Trust in Physician's. * $p < .05$.

Appendix R

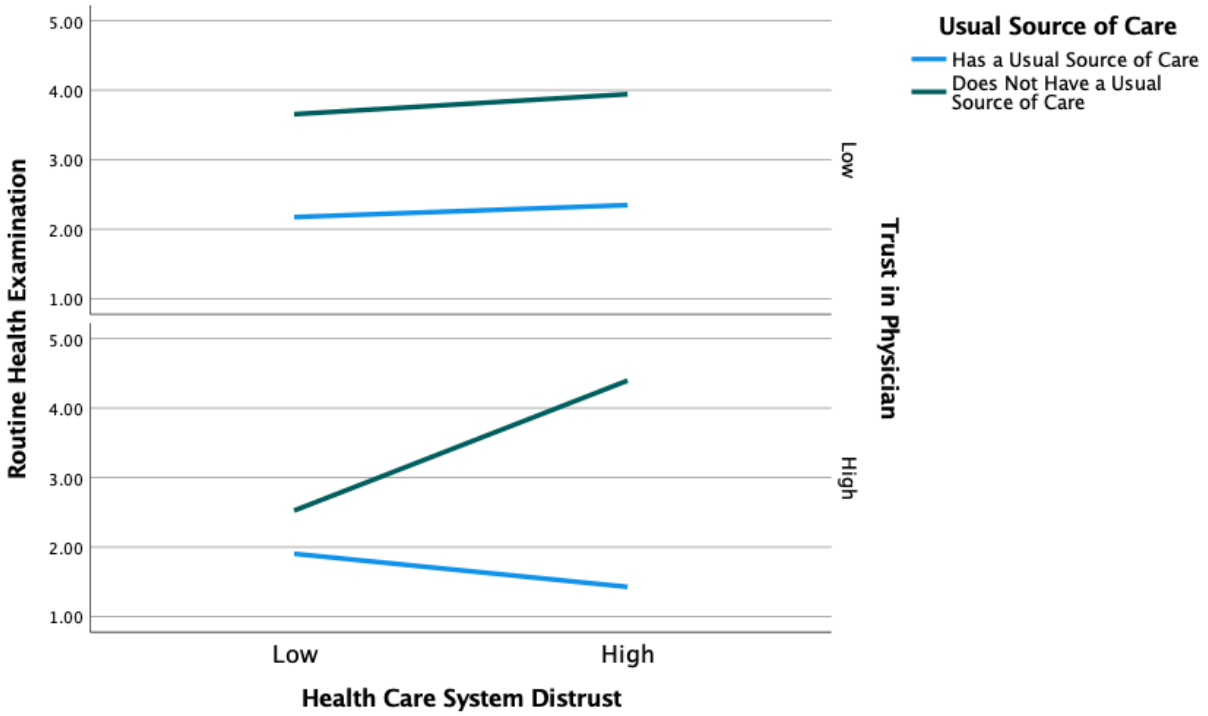

Figure 3. This graph depicts a marginally significant three way interaction between usual source of care, trust in physician, and health care system distrust on routine health examination.

Appendix S

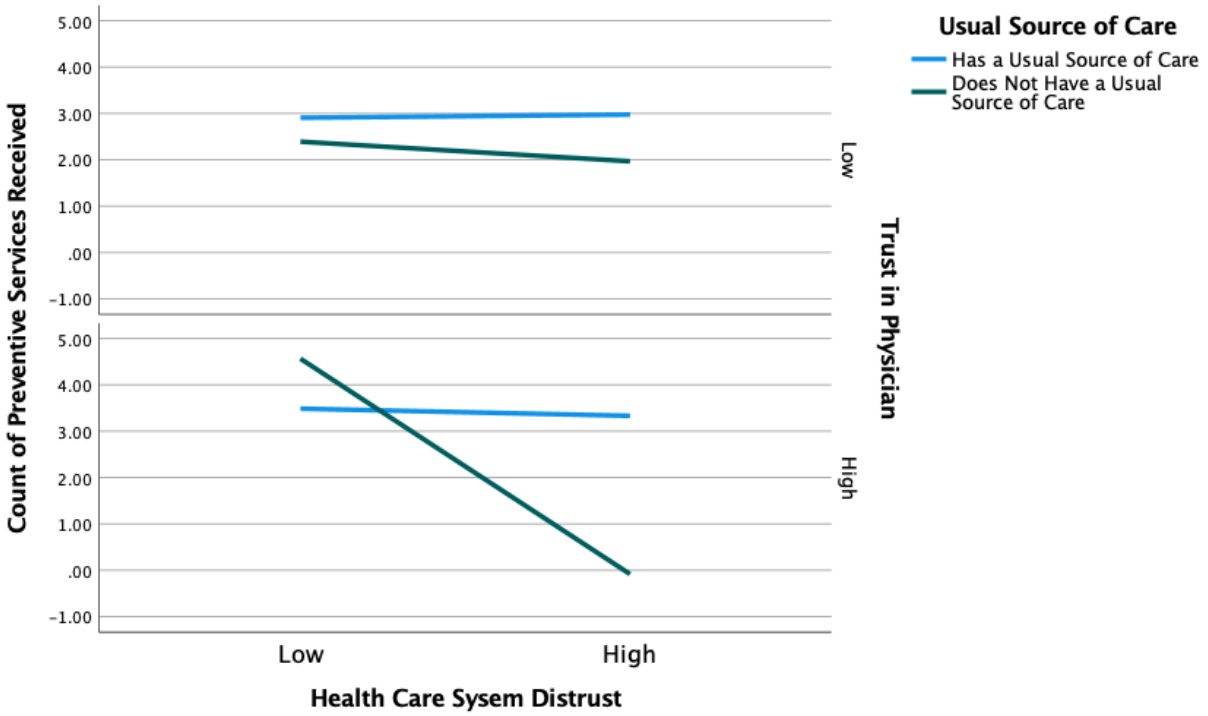

Figure 4. This graph depicts a marginally significant three way interaction between usual source of care, trust in physician, and health care system distrust on preventive service receipt.

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