IT'S MORE THAN HAIR: EXPLORING SOCIOCULTURAL FACTORS AND PERCEPTIONS OF THE BLACK HAIR SALON AND THE STYLIST'S ROLE IN HEALTH PROMOTION

by

Kelly N.B. Palmer

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As members of the Dissertation Committee, we certify that we have read the dissertation prepared by: Kelly N.B. Palmer
titled:

and recommend that it be accepted as fulfilling the dissertation requirement for the Degree of Doctor of Philosophy.

David Garcia — Date: Aug 16, 2021

Cynthia Thomson — Date: Aug 17, 2021

David Marrero — Date: Aug 16, 2021

Jennifer Hatcher — Date: Aug 17, 2021

Final approval and acceptance of this dissertation is contingent upon the candidate's submission of the final copies of the dissertation to the Graduate College.

I hereby certify that I have read this dissertation prepared under my direction and recommend that it be accepted as fulfilling the dissertation requirement.

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DEDICATION

Mabel Farrior Lane, my grandmother/stylist I never met- The seed was planted; you are with me.

Willie C. “Fuzzy” Brunson- Daddy, your “Heart” is finally a doctor.

Sanford Lane- Grandad, I kept reading and now I am a doctor.

Black Women- I see you. I see your resilience and vulnerability. You deserve better.

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ABSTRACT

Background

Black women suffer disproportionately from obesity-related chronic diseases, particularly at younger ages. In order to close the gap in these health disparities, efforts to implement culturally appropriate interventions using community-engaged and community-based approaches have increasingly popular in recent years. The hair salon, a community staple for Black women and highly accessible geographically in the U.S., provides increased opportunity for outreach and engagement of multi-level health promotion interventions. Black women regularly frequent the hair salon and oftentimes have long-established relationships with their stylist. This established relationship and routine interaction provides access and opportunity to deliver health messaging and interventions. Hair stylists are well-respected and well positioned to serve as lay health workers in addressing health disparities among Black women in the U.S.

Objectives

This dissertation is comprised of three studies: a systematic review of the literature and two qualitative studies; semi structured interviews with hair stylists and focus group discussions with Black women who patron hair salons. The studies sought to address the following three aims to: 1) synthesize the literature assessing obesity-related chronic disease health promotion interventions for Black men and women delivered in U.S. barbershops and hair salons; 2) assess the physical, cultural, and social environment of the hair salon setting as a setting for health promotion among Black women in the U.S.; and 3) assess the sociocultural factors of stylist-client engagement and perceptions about stylist-delivered health promotion. The dissertation was

guided by the settings approach theory to better understand the hair salon as a health promoting setting.

Methods

A PRISMA-guided systematic review was conducted from October 2019 to February 2020 to identify and critically evaluate health promotion interventions for Black men and women delivered in barbershops and hair salons. Six databases (Academic Search Ultimate, Cumulative Index of Nursing and Allied Health Literature (CINAHL), Embase, PsycINFO, PubMed, Web of Science (Science Citation Index and Social Sciences Citation Index)) were searched for eligible studies. Data were extracted and quality of evidence was assessed in duplicate. Experimental and quasi-experimental studies for adult ($\geq$ 18 years) African Americans delivered in barbershops and hair salons that evaluated interventions focused on risk reduction/management of obesity-related chronic disease: cardiovascular disease, cancer, and type 2 diabetes were included.

Primary data collection for qualitative interviews included semi-structured interviews and focus group discussions. Semi-structured interviews of hair stylists who service predominately Black women were held from October to December 2020 and focus group discussions with Black women who routinely received haircare services from a licensed hair stylist were held on February 20th and 27th 2021. For Aim 2, stylists' and clients' perceptions of the physical, cultural, and social constructs within the settings approach theory were assessed, while Aim 3 explored the extent hair stylists influence their Black female clients and clients' preferences for their stylist's role in salon-based health promotion programming. Thematic analysis of the data was conducted in an iterative, multi-step process.

Results

The systematic review yielded 14 studies that met the inclusion criteria. Most study interventions (n=10) were delivered in a barbershop with the remaining (n=4) were in hair salons. Intervention components, study designs, and outcomes vary widely across studies. Cancer was the most studied disease state followed by hypertension (n=7, 50%; n=5, 35.7% respectively). Behavior change was the focus of most interventions (n=10) while four studies reported clinical outcomes.

Among study participants for Aims 2 and 3, stylists (n = 30) were predominantly Black (96.7%), women (83.3%); clients (n = 39) had at least a 4-year college degree (89.8%), insurance (92.3%), and a primary care provider (89.7%). Regarding Aim 2, there was concordance between stylists and clients that the physical environment does not support healthy eating behaviors; the social environment is a source of information exchange and social support; and the cultural environment embodies a "safe" space for Black women. Findings for Aim 3 suggest clients are influenced by stylists they perceive as trustworthy, relatable, and credible. Trust, relatability, and credibility were deeply linked to racial and gender congruence. Clients are more likely to be receptive to stylists that model healthy behaviors and deliver health promotion only in the context of a hair-health connection. Stylists 'triaging' and referring to healthcare professionals for follow up was preferred by clients.

Conclusions

Health promotion interventions delivered in barbershops and hair salons are effective for promoting cancer screening and managing hypertension among Black men and women. More studies are needed that focus on diabetes and obesity and utilize the hair salon as a site for

intervention delivery. Understanding the physical, social, and cultural environments of the hair salon can inform the design of salon-based, rather than salon-placed interventions. Recognizing the context and degree of stylist influence and clients' perceptions of stylist-led health promotion programs can help researchers and public health practitioners leverage hair stylists' role in health promotion as lay health workers.

CHAPTER 1: INTRODUCTION

Black women comprise 7% of the U.S. population and 13.6% of women (1). Despite therapeutic advances that have increased overall life expectancy for most U.S. citizens, life expectancy for Black females at birth is 3 years shorter than for White women (2) and infant mortality is twice as high for children born to Black mothers (3). Moreover, Black women are disproportionately burden by many health conditions. Black women have a higher prevalence of chronic disease and maternal morbidity (4). Black women have the highest rates of obesity or being overweight than any other racial-gender group in the U.S. (5). Compared with White women, Black women are 50% more likely to be obese and at least twice as likely to be overweight (5). Black women are 60% more likely to have high blood pressure than White women, with diagnoses of cardiovascular disease at younger ages which has implications for long-term disease burden and maternal and infant health outcomes (6). After adjusting for age, Black women have the third highest prevalence of diagnosed diabetes at 12.0% of U.S. racial-gender groups and are twice as likely to die from diabetes as White women (7). Despite having lower incidence of breast cancer, mortality rates are 40% higher for Black women with rates increasing inversely with age (8). Black women are also twice as likely to die from myeloma and stomach cancer than White women (8).

There is a myriad of factors that contribute to these disparities. Among them are the social, cultural, economic, environmental, and political, contexts in which Black women exist. These health inequities are the cumulative result of inequitable structural and systemic conditions Black women experience throughout their lifetime. Inadequate access to quality education and healthcare, residential segregation, and wage inequities are among the social determinants that

contribute to poor health outcomes for Black women (9). Further, there is evidence supporting the adverse impact of racism and perceived discrimination on Black women's health status. Notably, perceived discrimination is associated with; insulin resistance and poor glycemic control, C-reactive protein levels, markers of adiposity- weight and body mass index, and hypertension (10-14). While race and gender are social constructs, it is important to recognize the intersectionality of these identities and the contexts by which they influence Black women's health. More than being a sum of identities, it is the synergy of being Black and a woman that contributes to the higher levels of discrimination, racism, and sexism Black women encounter more so than White women or Black men (15). When race and gender are considered together, larger associations between discrimination and health are found (16). Structural and systemic racism within the healthcare system, implicit bias of healthcare providers, and historically unethical medical and research practices in the U.S. have resulted in suboptimal healthcare delivery and underutilization of healthcare services (17).

To address these health disparities and address mistrust of the U.S. healthcare system among Black women, community-engaged and community-based approaches to deliver health promotion interventions have gained momentum over recent years. Faith-based organizations have served as a prime venue for health behavior interventions targeting Black women. The Black church offers social support/structure and religiosity, core cultural constructs among Black parishioners that when incorporated into interventions yield positive outcomes (18). Many faith-based interventions incorporate scripture and prayer into curricula to provide a deeper connection and reason for adopting healthy behaviors (18). Involving church leadership in delivering the

intervention or supporting/reinforcing engagement in the intervention utilizes role modeling and the social network that is important to the Black community (19).

Another viable opportunity to capitalize on the sociocultural factors that influence Black women's behavior is in hair salon health behavior interventions. Black women spend considerable amount of time and money at hair salons, thereby creating a captured audience suitable for health behavior interventions (20). It is not uncommon for a Black woman to have an established source of hair care, but to not have a primary care provider (21). This speaks to the importance hair and hair care plays in the lives of Black women. Black women will undergo hair care that can be time consuming, financially burdensome, physically uncomfortable, and unhealthy (due to exposure to chemicals, etc.) with regularity (20). It has been noted that hair stylists are trusted and respected by Black women and therefore can motivate their clients to engage in health behavior change. Hair salons and barber shops have been used in different aspects of health promotion research from formative research to recruitment of study participants to sites for the delivery of interventions (22). Studies using hair stylists to deliver health communication around breast cancer screening and other health behaviors have been shown to be effective (23). Further, the salon environment has been manipulated to support healthy behaviors. Interventions can leverage the unique influence stylists and the salon environment plays in the lives of Black women.

SETTINGS APPROACH THEORY

This dissertation is guided by the Settings Approach theoretical framework. Settings have long served as "major social structures that provide channels and mechanisms of influence for reaching defined populations (24). According to the Ottawa Charter of 1986, "health is created and lived by people within the settings of their everyday life; where they learn, work, play, and love" (25). Taken together, the settings approach theory was developed to shift the notion of settings merely serving as places to 'host' interventions to contextualizing the determinants of a setting as modifiable themselves (26, 27). Further refinement of the theory by the Jakarta Declaration (28) recommends settings "represent the organizational base of the infrastructure required for health promotion… and offer practical opportunities for the implantation of comprehensive strategies." The theory also acknowledges the significance of 'place-specific' assessment to understand the "culture, history, and unique context" of a setting (26). The framework is comprised of three parts: (a) understanding settings, (b) changing settings, and (c) knowledge development and knowledge translation. The focus of this dissertation is to understand the hair salon setting. The framework consists of a series of questions that is less bound to specific constructs unlike other frameworks. The less prescriptive nature of these questions allows for diversity in perspectives conducive to participatory approaches. The questions are categorized according to the matters and domains they address:

a) Differences and similarities across types of settings,

b) Unpacking assumptions,

c) Identifying localized determinants of health,

d) Mapping stakeholder interests

e) Addressing power relations.

ORGANIZATION OF DISSERTATION

This dissertation follows a three-paper model with three aims accomplished in one publication each, subsequently presented as individual chapters of the dissertation. Each aim is guided by questions from the settings approach theoretical framework to understand the salon setting. Chapter 2, a systematic review of the literature synthesizes obesity-related chronic disease interventions for Black men and women delivered in barbershops and hair salons. This review examines cultural tailoring of interventions, level of involvement of barbers and stylists in the intervention, and measures of feasibility. The review assesses similarities and differences across settings by evaluating interventions delivered in barbershops and hair salons. It also examines assumptions by measuring feasibility. This aim delineates the scope of interventions to date and identifies areas of opportunity to address obesity-related chronic disease disparities. The review assesses similarities and differences across settings by evaluating interventions delivered in barbershops and hair salons. It also examines assumptions by measuring feasibility.

Chapters Three and Four assess environmental factors of the hair salon, of client-stylist engagement, and perceptions of salon-based health promotion. This is achieved through primary data collection; semi-structured interviews and focus groups. Chapter Three provides perspectives of hair stylists and Black female salon clients on the hair salon as a setting for health promotion. The physical, social, and cultural environments are evaluated, which can inform how best to leverage and shift the salon to a health promoting setting. In Chapter Four, stylist influence on clients and perceptions of stylists as lay health workers are examined. Chapters Three and Four examine localized determinants of health (elements of the physical, built, and psychosocial environment), stakeholder interest (identify stakeholders, agendas

meanings of health, and measure of determinants of health), and power relations (determine relative power, access control, and agenda setting). Disentangling context and degree of stylist influence and acceptability of stylists as lay health workers can inform future stylist-delivered interventions.

SPECIFIC AIMS

Aim 1: To synthesize the literature assessing obesity-related chronic disease health promotion interventions for African Americans/Black people delivered in U.S. barbershops and hair salons. This systematic review of the literature: a) summarizes the effectiveness of barbershop/salon-based chronic disease interventions; b) summarizes culturally-tailored components of interventions; c) summarizes the extent to which barbers and stylists were engaged in intervention strategies; d) summarizes feasibility outcomes and e) identifies areas where more research is warranted.

Aim 2: To assess the physical, cultural, and social environment of the hair salon setting as a setting for health promotion among Black women in the U.S. This qualitative inquiry is an exploration of concordance between stylists and Black, female clients in perceptions of the salon environment as a setting for health promotion.

Aim 3: To assess the sociocultural factors of stylist-client engagement and perceptions about stylist-delivered health promotion. This qualitative inquiry was an exploration of the extent to which hair stylists influence their Black female clients and clients' preferences for their stylist's role in salon-based health promotion programming.

CHAPTER 2: HEALTH PROMOTION INTERVENTIONS FOR AFRICAN AMERICANS DELIVERED IN U.S. BARBERSHOPS AND HAIR SALONS- A SYSTEMATIC REVIEW

BACKGROUND

African Americans, the second largest minority group, account for 13.4% of the U.S. population (29). African Americans are disproportionately burdened by obesity and related chronic diseases such as heart disease, cancer, and type 2 diabetes resulting in higher rates of morbidity and mortality than non-Hispanic whites (NHW) (4). African Americans have the second highest prevalence for obesity and diabetes (46.8% and 12.7%, respectively) of any racial/ethnic group (30). Regarding cardiovascular disease, African Americans are twice as likelyto have a stroke, die from heart disease, and 50% more likely to have high blood pressure than NHW (6). African Americans have higher incidence of colorectal cancer and are twice as likely to die from multiple myeloma and stomach cancer than NHW (8). Moreover, African American men are more than twice as likely to die from prostate cancer, while African American women are more likely to die from breast and cervical cancers than NHW (8). Many social determinants of health create barriers or pathways to risk factors for African Americans including wage inequality, unfair housing laws, and reduced access to quality education and health care (9, 31). Historically, African Americans have had mistrust in the medical and research community making them less likely to see a primary care doctor and participate in health promotion research (32-35). Developing effective, culturally appropriate health promotion interventions thatengage African Americans are vital to mitigating conditions that lead to health inequities.

By working with community partners and trusted sources of health care such as same race providers, community health workers, and medical organizations that focus on African Americans, intervention developers can identify cultural barriers to care, get support in coordinating care or linking people to resources, deliver health promotion interventions, and identify socioeconomic and other factors that contribute to health disparities. Engaging African Americans in health promotion interventions has been challenging likely in part due to a lack of consideration of the role culture plays in components such as intervention attendance and adherence. Interventions are oftentimes placed in environments that are not viewed as accessible or are deemed unwelcoming and therefore do not meet people where they work, live, and play. To remedy the issues with health promotion engagement and to tackle health inequities among African Americans, researchers and health program interventionists have looked to place interventions in community-sites that are viewed as more culturally appropriate, trusted and acceptable.

Health behavior researchers and programmers have utilized faith-based organizations to reach the African American community (36, 37). The church has historically served as a source of refuge where members and the African American community at large can gather for non-religious purposes such as socialization and civic and political activities. As an integral part of the communities in which they reside, the church is often tasked with community outreach initiatives as well as economic development opportunities for local residents. Researchers and programmers can benefit from including core African American cultural constructs such as religiosity and social support/structure offered by the church in their interventions (18). Furthermore, leveraging the social network by engaging leaders in the church that can reinforce

participation or model the desired healthy behavior can be advantageous (19). Incorporating prayer and scripture into curricula gives participants a deeper connection and reason for adopting the desired behavior change (18). For all the progress in reaching the African American community, faith-based and faith-placed interventions have limitations. Young African American adults and African American men are less likely than older African Americans and African American women to attend church services regularly (38). Also, black churches have found themselves inundated with initiatives and competing interests making it difficult to prioritize implementing health promotion interventions (39).

Barbershops and hair salons have the potential to capitalize on the sociocultural factors that influence African Americans' behavior. Much like the church, barbershops and hair salons are staples in the African American community providing African American cultural constructs such as communalism and expressiveness (40). As sources of entrepreneurship for African Americans, these establishments earn respect for not only the owners, but for the barbers and stylists as well. Because they are highly accessible, barbershops and hair salons have been involved in health promotion activities such as formative research, subject recruitment, and delivery/implementation of interventions (22, 40-46). Because African American men have traditionally been a difficult group to engage, barbershop-based and barbershop-placed interventions have become increasingly popular over the last decade (47). Oftentimes, African American men will spend hours at the barbershop even when not being serviced. During this time one can network for a job, buy or sell products, advertise a business, watch movies or sports, discuss or get advice on personal and family affairs, and participate in other recreation (play board/video games, card, dominoes, etc.) (47).

Like their male counterparts, African American women maintain a high-level of engagement with the hair salon for many of the same reasons. Due to the unique and close relationship African American women have with their stylist, researchers can find opportunity in delivering interventions in hair salons and to a further extent by hair stylists (23, 48-52). Hair stylists are trusted by their clients and therefore serve as a confidante, a reliable source of information, and oftentimes as a close companion. This trust is in stark contrast to the mistrust of the medical system and research community common among African Americans. Because of this trust/mistrust, reduced access to healthcare, and lack of culturally appropriate interventions, it is not uncommon for an African American woman to have an established source of hair care, but not have a primary care provider (21). This reality speaks to the importance the hair salon plays in the lives of African American women. Oftentimes hair care for African American women can require regular, lengthy visits to the salon thereby providing a captured audience suitable for health behavior interventions (20).

Very few systematic reviews have examined site or setting for engaging African Americans in health promotion. Current reviews have primarily focused on "cultural adaptions" of evidence-based interventions (race concordance of interventionist, spirituality, etc.) (53-57). Of those that have considered study setting, the focus has been largely on recruitment strategies to enhance Black participation in clinical trials using churches, barbershops, and hair salons as study recruitment sites (58, 59). There is one synthesis of the literature that examined interventions delivered in barbershops and hair salons, however, it did not focus on African Americans (22). In 2015, a qualitative systematic review was conducted describing health promotion interventions for African American men delivered by barbers; this review did not include interventions

delivered in hair salons or that focused on African American women (47). This is the first systematic review that critically examines existing health promotion interventions for African Americans delivered in barbershops and/or hair salons and elucidates if there is quality evidence for the effectiveness of these interventions. Characteristics of effective interventions are identified with emphasis on the leading health inequities in obesity and related chronic diseases in this population: heart disease, cancer, and type 2 diabetes.

METHODS

Literature Search

This systematic review was conducted according to the guidelines set by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (60). The study was registered with the International Prospective Register of Systematic Reviews (PROSPERO) in 2020 (CRD42020159050). The detailed prespecified protocol has been previously published (61). Comprehensive search strategies were developed in consultation with a medical librarian, and implemented for the following databases: Academic Search Ultimate, Cumulative Index of Nursing and Allied Health Literature (CINAHL), Embase, PsychInfo, PubMed, Web of Science, and ProQuest Dissertations from inception to October 2019 (**Appendix C**). Controlled vocabulary terms in databases (including MeSH and Emtree) and keywords used in the search were guided by two thematic areas related to population and intervention sites resulting in the following terms: “African American,” “Black American,” “African Ancestry,” “barber,” “barbering,” “beautician,” “beauty culture,” “cosmetologist,” “hair,” “hairdresser,” “hairstylist,” “stylist,” “beauty shop,” “beauty salon,” “hair salon,” and “salon.” The final search was conducted on October 08, 2019.

Inclusion Criteria/Study Selection

Studies were included if they met the following inclusion criteria:

1) Adult African Americans were the target population for the intervention.
2) The intervention was delivered in a U.S. barbershop or hair salon.
3) The study evaluated an intervention aimed at reducing risk factors or improving health outcomes of obesity and/or related chronic conditions (i.e. cardiovascular disease, cancer, and type 2 diabetes).

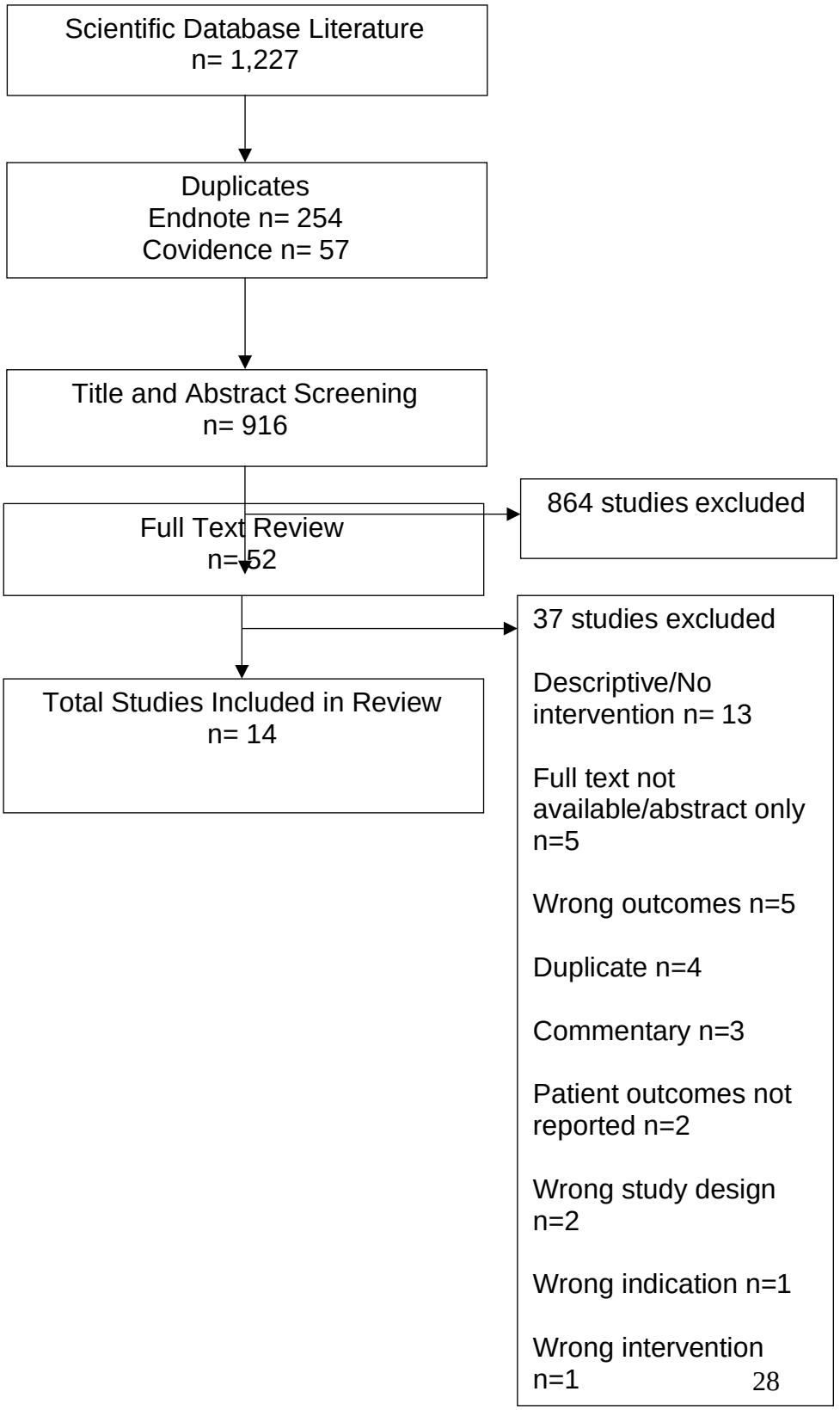
Experimental and quasi-experimental study designs including randomized control trials (RCTs), non-equivalent posttest only, and pre-posttest studies were included. Studies were excluded if participants were children/adolescents (aged <18 years), the intervention took place outside of the U.S., or if the article was published in a language other than English.

Identification of Eligible Articles

Figure 1 displays the screening and inclusion process depicted in a flow diagram. 1,227 records were identified through a search of the electronic databases by study author JM. After duplicates were removed, 973 records were uploaded to Covidence (Veritas Health Innovation, Melbourne Australia). 57 duplicates were removed, and 916 articles remained. Titles and abstracts were reviewed in triplicate by 3 of the study authors (KP, PR, and FM) resulting in 57 articles for full-text review. Study authors KP and PR independently reviewed the full text of each article against the inclusion/exclusion criteria. This resulted in 13 articles for inclusion in this review. One article reported on 2 studies, 2 articles are from the same study, but report different outcomes,

and 2 articles are from the same study with one article reporting outcomes after extending the intervention (42, 49, 50, 62, 63).

Figure 1. PRISMA flowchart



Data Extraction and Quality Assessment

Data extraction was completed in duplicate by study authors KP and PR using a Research Electronic Data Capture (REDCap) database developed specifically for this review (Appendix **D**) (64). Data reports were reviewed for discrepancies by FM. Data points extracted from each article included: first author's last name, year of publication, article title, sample size, age range or mean age, gender, socioeconomic status of participants, geographic location, disease focus, study design, study setting, intervention/control description, intervention duration, follow up time points, if a community-based participatory research approach was employed, interventionist, if culturally-sensitive strategies were implemented, if incentives were given, theoretical frameworks/models, barbershop/hair salon recruitment strategies, and study outcomes and results (noting significance). For studies where the barber/stylist was the interventionist, data on intervention training and strategies for intervention fidelity were also collected. Due to the heterogeneity of studies and outcomes, data were analyzed and synthesized for presentation narratively and in tables in 2020. Quality assessment was independently assessed by study authors KP and PR using the Effective Public Health Practice Project Quality Assessment Tool (EPHPP) (65). The EPHPP has high inter-rater reliability, a lower risk of bias, and has been previously tested for validity and reliability (65, 66). Articles were given a global rating by each of the two reviewers of weak, moderate, or strong based on the six component ratings of selection bias, study design, confounders, blinding, data collection, and withdrawals/dropouts. The two reviewers discussed global ratings for each article and a final decision of both reviewers was recorded in a REDCap database (**Appendix E**).

RESULTS

Study Characteristics

Because one article reported outcomes for two studies, (42) 14 studies are included in the final review. Characteristics of the 14 studies are presented in **Table 1**. Studies were published between 2007 and 2019. Seven studies were randomized control trials (RCTs) (six cluster RCTs and 1 RCT), four were pretest-posttest (three 2- group and one 1-group), two were nonrandomized feasibility studies, and one (1 group) posttest only study. Sample sizes varied widely from 20 to 1,297 participants. Mean age of study participants ranged from 37-57.4 years, but ranges were wide with participants aged 18 to 88. Socioeconomic status (SES) was reported by all but two studies. Participants in three studies were reported as having only a high school education or less, low-income, and/or mostly uninsured (41, 67, 68). Studies were mostly conducted in large urban/metropolitan cities with only one in a rural area (41). Seven interventions focused on outcomes related to cancer, (23, 49, 68-72) five on cardiovascular disease (i.e. blood pressure), (42, 62, 63, 73) one on type 2 diabetes, (50) and one on obesity (41). Barbershops accounted for the majority of study settings (n=9), (42, 62, 63, 68-73) with four studies taking place in hair salons (23, 41, 49, 50). Interventions taking place in barbershops targeted men (n=9) (42, 62, 63, 68-73) while those in hair salons targeted women (n=4) (23, 41, 49, 50).

Table 1. Study Characteristics

First Author, Year, Ref	Title	Sample Size	Mean Age/ Age Range	SES	Geographic Location	Study Design	Disease State/Focus	Setting
Hess, 2007	Barbershops as Hypertension Detection, Referral, and Follow-Up Centers for Black Men	n=94	40-60	mostly insured or have access to public health care system	Dallas, Texas	Non-Randomized Feasibility	Cardiovascular Disease	Barbershop
Hess, 2007	Barbershops as Hypertension Detection, Referral, and Follow-Up Centers for Black Men	n=321	40-60	mostly insured or have access to public health care system	Dallas, Texas	Non-Randomized Feasibility	Cardiovascular Disease	Barbershop
Wilson, 2008	Hair Salon Stylists as Breast Cancer Prevention Lay Health Advisors for African American and Afro-Caribbean Women	n=1,185	38	Not reported	Brooklyn, New York	Cluster Randomized Control Trial	Cancer	Hair Salon
Holt, 2010	Cancer Awareness in Alternative Settings: Lessons Learned and Evaluation of the Barbershop Men's Health Project	n=163	45+	Not reported	Birmingham, Alabama	2 group Pretest-Posttest	Cancer	Barbershop
Johnson, 2010	Beauty Salon Health Intervention Increases Fruit and Vegetable Consumption in African-American Women	n=20	18-70	>50% (11/20) High School Diploma	Rural South Carolina	2 group Pretest-Posttest	Obesity	Hair Salon

First Author, Year, Ref	Title	Sample Size	Mean Age/ Age Range	SES	Geographic Location	Study Design	Disease State/Focus	Setting
Luque, 2011	Barbershop communications on prostate cancer screening using barber health advisers	n=40	53	mean education= 14 years, mean household income <$70k, 78% privately insured	Tampa, Florida	1 group Posttest only	Cancer	Barbershop
Sadler, 2011	A Cluster Randomized Controlled Trial to Increase Breast Cancer Screening Among African American Women: The Black Cosmetologists Promoting Health Program	n=984	40.6 20-88	mostly college educated (52% some college, 34% complete college)	San Diego, California	Cluster Randomized Control Trial	Cancer	Hair Salon
Victor, 2011	Effectiveness of a Barber-Based Intervention for Improving Hypertension Control in Black Men	n=1,297	Intervention: 49.5 Control: 51.2	85% middle income and insured	Dallas, Texas	Cluster Randomized Control Trial	Cardiovascular Disease	Barbershop
Odedina, 2014	Development and assessment of an evidence-based prostate cancer intervention programme for black men: the W.O.R.D. on prostate cancer video	n=142	50-59	>50%: <$20k, H.S. diploma, had insurance, had PCP	Florida	1 group Pretest-Posttest	Cancer	Barbershop

First Author, Year, Ref	Title	Sample Size	Mean Age/ Age Range	SES	Geographic Location	Study Design	Disease State/Focus	Setting
Sadler, 2014	Lessons learned from The Black Cosmetologists Promoting Health Program: A randomized controlled trial testing a diabetes education program	n=984	40.6 20-88	mostly college educated (52% some college, 34% complete college)	San Diego, California	Cluster Randomized Control Trial	Type 2 Diabetes	Hair Salon
Frencher, 2016	PEP Talk: Prostate Education Program, Cutting Through the Uncertainty of Prostate Cancer for Black Men Using Decision Support Instruments in Barbershops	n=120	40+	majority income<$24k; uninsured, college or more	South Los Angeles, California	2 group Pretest-Posttest	Cancer	Barbershop
Cole, 2017	Community-Based, Preclinical Patient Navigation for Colorectal Cancer Screening Among Older Black Men Recruited From Barbershops: The MISTER B Trial	n=731	57.4 50+	mean annual income= $16,726, 1/3 <High School diploma, ~50% unemployed	New York, New York	Randomized Control Trial	Cancer	Barbershop
Victor, 2018	A Cluster-Randomized Trial of Blood- Pressure Reduction in Black Barbershops	n=319	Intervention: 54.4 Control: 54.6 35-79	mostly college educated, have regular medical provider and insured	Los Angeles, California	Cluster Randomized Control Trial	Cardiovascular Disease	Barbershop
Victor, 2019	Sustainability of Blood Pressure	n=319	I: 54.4 C: 54.6	mostly college educated, have regular medical	Los Angeles, California	Cluster Randomized Control Trial	Cardiovascular Disease	Barbershop

First Author, Year, Ref	Title	Sample Size	Mean Age/ Age Range	SES	Geographic Location	Study Design	Disease State/Focus	Setting
	Reduction in Black Barbershops		35-79	provider and insured				

Interventions

Table 2 summarizes characteristics of the interventions. All studies evaluated barbershop/hair salon-based health promotion interventions aimed at reducing risk factors for or improving health outcomes of obesity-related chronic conditions in African Americans. Interventions were extremely heterogenous in mode of delivery, duration, and content. Most interventions were delivered in-person, two were delivered via media (video/DVD), (70, 71) and one was delivered via phone calls (68). Barbers and stylists served as the interventionists in most cases. In two studies, when not serving as the primary interventionist, barbers and stylists supported client engagement with the interventionist, a medical professional/pharmacist (62, 63). One study employed African American actors to portray barbers, barbershop clients, and doctors in a video-based intervention (71). Two interventions were led by the researcher/research staff and one by trained counselors and community health workers (42, 68, 70). Intervention duration varied from 25 minutes (video) to 14 months. The use of Social Cognitive Theory (SCT) was reported in three studies; (23, 42) two studies cited Health Belief Model; (49, 50) one study employed the Personal Integrative Model of Prostate Cancer and the Health Communication Process model, (71) one study utilized peer learning, (62) and one study adapted a model from the AIDS Community Demonstration Project (73). Only five studies explicitly stated using a community-based participatory research (CBPR) approach (23, 49, 69, 70, 72).

Barbershop/hair salon recruitment strategies were described for most of the studies. Five of the studies employed community agencies or existing community partnerships to recruit sites (49, 50, 69, 70, 72). Three studies targeted certain geographical areas (23, 68, 73). For two studies, hair stylists were assessed for fit with the mission of the project (41, 50). And one study reported

specific criteria for selection of barbershops (73). Aside from using the barbershop or hair salon as the primary site for interventions, other culturally adapted strategies used were tailoring materials (print/media) for African Americans and in some cases specifically by gender. Materials were either developed or tested by the target audience prior to use in the studies. Other tactics were ensuring interventionists and/or data collectors were African American. One study incorporated ancestral storytelling, a traditional African communication model, as a mechanism for the hair stylists to deliver the intervention message to their clients and subsequently to their clients' family and friends (50). The majority of studies provided incentives to barbers/stylists and/or customers. Intervention content focused on the following topics: cancer (screening, prevention, treatment, medical provider engagement, access, risk factors, general knowledge), cardiovascular disease (blood pressure (BP)/hypertension (HTN) treatment, medical provider engagement, access), diabetes (screening, medical provider engagement, access, risk factors, general knowledge), obesity (physical activity, diet, water consumption), skill building, and self-efficacy to engage in the intended health behavior.

Table 2. Intervention Characteristics

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
Hess, 2007	Barbershop	Staff delivered intervention- Physician referral for follow up with BP report card for ongoing feedback Role model stories depicting successful risk reduction strategies adopted by hypertensive African American men	Both groups received written results of the 3 BP screenings and standard recommendations for interval medical follow-up	Researcher/Research Staff	8 months/ Baseline and post-intervention	Social Cognitive Theory	Not reported	Not reported	Intervention delivered by African American research assistants and medical/pre medical students supervised by an African American nurse	Barbers Customers
Hess, 2007	Barbershop	Barbers delivered the intervention- Blood Pressure report cards to be signed by provider and returned to barber	American Heart Association brochures titled High BP in African Americans	Barbers	14 months/ Post-intervention	Social Cognitive Theory	Not reported	Not reported	Not reported	Barbers Customers
Wilson, 2008	Hair Salon	Intervention designed to promote stylist's skills	No-treatment control	Hair Stylists	3 months/ Baseline and 1-3	Social Cognitive Theory	Yes	List of salons from targeted neighborhoods generated via	No description	Hair Stylists

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
		and motivation to provide correct and consistent breast health info to female clients on an ongoing basis. Breast health recommendations included monthly breast self-exams, annual clinical breast exams, and routine mammography for women 40+. Stylists to promote client skills, self-efficacy, and motivation for engaging in breast health behaviors Written materials for clients on			post-intervention			phone book listings and internet by zip codes. Randomly selected salons and contacted owners to assess willingness to participate in study.		

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
		where to get services for breast cancer detection and treatment								
Holt, 2010	Barbershop	Health messages about CaP and CRC delivered by barbers to clients. Barbers help with strategies for informed decision making about screening supported by posters, print materials, and videos	Not reported	Barbers	3 months/ Baseline and post-intervention	Not reported	Yes	Barbershops recruited and trained by the community partnership	Community advisory panel developed intervention and recruited barbers	Customers
Johnson, 2010	Hair Salon	3 scripted motivational sessions during clients' service appointments encouraging them to adopt healthy behaviors- 1) Role modeling	No treatment control at second salon	Hair Stylists	6 weeks/ Post-intervention	Not reported	Not reported	Stylists were screened to assess value of evidence-based health and any changes to the stylist's personal health in the	Broad overall health changes instead of specific numerical goals with focus on efficacy.	Not reported

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
		2) Motivation 3) Check-in and recognition Information packets- 4 pages of info on fruit/vegetable consumption, PA, and water consumption reviewed by dieticians Starter kits- Samples of fruits/vegetables and a bottle of water given at sessions 1 and 3						last 12 months.	Materials reviewed by African American women before study	
Luque, 2011	Barbershop	CaP education materials developed by research team (brochure/poster, video, and Flipchart) tailored for African American men adapted from early	Not applicable	Barbers	one session during client visit to barbershop/ post-intervention	Not reported	Yes	Community health agency helped identify 2 barbershops. Snowball strategy from initial 2 barbershops resulting in 2 more barbershops.	Education materials tailored for African American men via learner verification and then piloted with African	Not reported

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
		detection/screening to informed decision-making for PCS guidelines. Plastic prostate model, barber talking points card, and community resources list						Clients- convenience sample of barbershops	American men.	
Sadler, 2011	Hair Salon	Cosmetologists were to engage clients in conversation about adhering to BC screening guidelines for them, family, and friends, and importance of early detection (CBE and mammography) and treatment.	Diabetes education intervention identical to BC intervention in all ways but content	Hair Stylists	6 months/ baseline and 6 months	Health Belief Model	Yes	African American church members helped recruit cosmetologists and facilitate meeting with study leader. Clients recruited via African American research assistant or stylists.	Ancestral storytelling	Hair Stylists Customers

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
		A series of eight laminated "Mirror Challenges" were sequentially posted in a corner of the cosmetologists ' mirror. Relevant articles from lay newspapers and magazines trusted by the African American community were laminated and given to cosmetologists . A 3-ring binder of info was used as well. A soft plastic BC model to show how a BC lump felt and string of								

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
		clay beads to depict various sizes of BC lumps given. BC posters with images of African American women throughout salon.								
Victor, 2011	Barbershop	Barbers offered repeated BP checks during haircuts, gave repeated personalized sex-specific health messages to promote physician follow up Posters with barbershop patrons modeling HTN treatment behaviors and testimonials Patrons with	Standard HTN education pamphlets from the AHA written for a broad audience of black men and women	Barbers	10 months/ Baseline and 10 months	Adapted from the AIDS Community Demonstration Projects that mobilized community peers to deliver intervention messages (specific action items) with role model stories and made medical equipment available in the daily environment	Not-reported	Barbershops selected to represent 4 geographic areas >95% black male clientele >10 years in business >3 barbers	Not-reported	Barbers Customers

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
		elevated BP recommended to follow up with a physician (or study nurse) Patrons with elevated BP received referral cards to give physicians for feedback and to document patron-physician interaction								
Odedina, 2014	Barbershop	A prostate cancer education video "Working through Outreach to Reduce Disparity (W.O.R.D.) on Prostate Cancer" Focuses on explaining the risk factors for CaP, how to reduce the risk	Not applicable	African American actors portraying barbers, clients, ministers, and doctors	25 minutes/ Baseline and post-intervention	Personal Integrative Model of Prostate Cancer Disparity (PIPCaD) model Health Communication Process Model	Not reported	Not applicable	Using African American actors to model desired behaviors for target population (African American men) Video setting in a barbershop	Customers

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
		for CaP, and informed decision making about CaP screening. Barbershop conversation teaches main character importance of CaP prevention (CaP survivor shares his story). As a result, he decides to follow up with doctor.								
Sadler, 2014	Hair Salon	Diabetes education intervention to increase diabetes knowledge, change diabetes attitudes, and increase diabetes screening behaviors among	BC education intervention identical to diabetes intervention in all ways but content	Hair Stylists	6 months/ baseline and 6 months	Health Belief Model	Not reported	African American church members helped recruit cosmetologists and facilitate meeting with study leader. Clients recruited via African American	Ancestral storytelling	Hair stylists

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
		African American women. Article references Sadler 2011 with details of BC intervention that is comparable to diabetes intervention with only difference being content.						research assistant or stylists.		
Frencher, 2016	Barbershop	2 Decision Support Instruments in DVD format: VCU- culturally tailored to African American men FIMDM- general audience Both present treatment options for CaP	DSI DVD designed for general audience	Researcher/Research Staff	One-time intervention, 30 minutes/ 3 months post-intervention	Not reported	Yes	Recruited from Black Barbershop Health Outreach Program (BBHOP) and other non-BBHOP barbershops. Recruitment was scripted and letters of support and consent for research were	VCU's DSI DVD tailored to African American men using focus group data from African American men to develop the decision tool. The cast in the video are mostly	Barbers Customers

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
								obtained from owners.	African American	
Cole, 2017	Barbershop	3 arms (PN, MINT, PLUS); cross randomized PN: Patient navigation for CRC screening. 2+ phone calls: 1) education 2) screening readiness assessment & barriers. PN encourage colonoscopy appt. within 2 weeks. Or FIT if preferred.	MINT: motivational interviewing and goal setting, 4 sessions PLUS: PN + MINT All: Printed education materials from American Cancer Society and NHLBI	CHWs/Trained Counselors	6 months/ 2 weeks and 6 months	Not reported	Not reported	Barbershops were identified by study staff from densely populated African American neighborhoods. Participants (customers and local residents) recruited during screening event at barbershop.	Not reported	Not reported
Victor, 2018	Barbershop	Barbers measured BP and encouraged follow up with pharmacist Pharmacists met regularly with participants in	Active control approach (in which barbers encouraged lifestyle modification and doctor appointment)	Medical Professionals-Pharmacists	6 months/ Baseline and 6 months	Peer learning	Not reported	Not reported	No description	Customers

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
		barbershops, prescribed meds, measured BP, encouraged lifestyle changes, and monitored plasma electrolyte levels Pharmacists followed up with participants' physician (via progress notes) Pharmacists interviewed participants to generate peer-experience stories (posted on shop walls), reviewed blood-pressure trends, and gave participants $25 per pharmacist								

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
		visit to offset the costs of generic drugs and transportation to pharmacies. 2 BP screening results with follow up recommendations and identification cards, follow up calls at 3mos, culturally specific health sessions, and vouchers for haircuts								
Victor, 2019	Barbershop	Barbers measured BP and encouraged follow up with pharmacist Pharmacists met regularly with participants in barbershops, prescribed	Instruction about BP and lifestyle modification	Medical professionals-Pharmacists	12 months/ baseline, 6 months, and 12 months	Not reported	Not reported	Not reported	No description	Customers

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
		meds, measured BP, encouraged lifestyle changes, and monitored plasma electrolyte levels Pharmacists followed up with participants' physician (via progress notes) Pharmacists interviewed participants to generate peer-experience stories (posted on shop walls), reviewed BP trends, and gave participants $25 per pharmacist visit to offset the costs of generic drugs								

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
		and transportation to pharmacies. 2 BP screening results with follow up recommendations and identification cards, follow up calls at 3mos and 9mos, culturally specific health sessions, and vouchers for haircuts								

BP, Blood Pressure; CaP, Prostate Cancer; CRC, Colorectal Cancer; PA, Physical Activity; PCS, Prostate Cancer Screening; BC, Breast Cancer; CBE, Clinical Breast Examination; AHA, American Heart Association; HTN, Hypertension; VCU, Virginia Commonwealth University; DSI, Decision Support Instrument; FIMDM, Informed Medical Decisions Foundation; CHW, Community Health Worker

For interventions delivered by barbers or hair stylists (n=8), details about intervention training and fidelity strategies are provided in **Table 3**. Trainings were in-person and facilitated by the researcher/research staff and when appropriate medical or content professionals. Written materials (handbooks, brochures, scripts, etc.) were used to supplement trainings as well as ongoing/refresher trainings. Intervention fidelity strategies included on-site monitoring by research staff or a community research partner, regular quality assurance review of the data being collected, and researcher accessibility to the barbers/stylists for continued support. One study did not monitor fidelity throughout the intervention, but did post-study surveys and interviews with study participants to evaluate barber intervention delivery (73).

Table 3. Barber/Stylist Led Interventions

Author, Year	Interventionist/Setting	Intervention Training	Intervention Fidelity Strategies
Hess, 2007	Barbers/Barbershop	Not reported	Research staff regularly checked the validity of the encounter form data against data stored in the electronic monitors and intermittently observed customer flow to validate the barbers' counts of adult and child business.
Wilson, 2008	Hair Stylists/Hair Salon	Stylists were trained to conduct tailored and culturally sensitive counseling that would encourage clients to engage in breast health behaviors 2, two-hour workshops, a reference handbook, and ongoing support and technical assistance by research staff. Stylist training was implemented in waves, based on planned initiation of intervention activities in that salon	Program staff made frequent visits to salons to support stylists in their promotion of message delivery throughout the time during which the program was administered.
Holt, 2010	Barbers/Barbershop	Barbers trained by community advisory panel. One day of training education training modules and barbers given strategies for helping their clients make informed decisions about screening	Did not collect/not report.
Johnson, 2010	Hair Stylists/Hair Salon	Stylists were trained by research team. Motivational sessions using a script as a guide with practice and feedback from research team member.	Weekly check-ins.
Luque, 2011	Barbers/Barbershop	10 contact hours of training (didactic, interactive group, and team building) on administering	Health agency partner monitored barbers via shop visits, attended project meetings, and

Author, Year	Interventionist/Setting	Intervention Training	Intervention Fidelity Strategies
		materials by research team, health agency partners, and local urologist at agency's facilities and in barbershops.	facilitated focus group work with barbers for post-intervention evaluation.
Sadler, 2011	Hair Stylists/Hair Salon	Cosmetologists received ~4 hours of 1-on-1 training with the Principal Investigator and an additional 4 hours of reading materials that reviewed and summarized the Principal Investigator's training. The reading materials resources: National Cancer Institute, American Cancer Society, and Susan G. Komen-for-the-Cure Foundation. Cosmetologists also received individual training from an African American ancestral storyteller to enhance their ability to pass along their health promotion messages orally. Every two weeks, the cosmetologists were given hands-on training materials and shown ways the materials could be used to facilitate discussions with their clients to keep the screening message updated with fresh information	Principal Investigator made unannounced visits to salons every 2 weeks during the first 3 months and then monthly thereafter to restock and bring new materials (for consistency), offer training, and answer questions. Principal Investigator was accessible to cosmetologists at all times.
Victor, 2011	Barbers/Barbershop	Not reported	Participant follow up survey and interview data on intervention delivery by barbers.
Sadler, 2014	Hair Stylists/Hair Salon	IRB consent training. Stylists received 1-on-1 training with the Principal Investigator and reading materials.	Principal Investigator and research team made unannounced visits to salons. Principal Investigator was accessible via cell phone to stylists at all times.

Author, Year	Interventionist/Setting	Intervention Training	Intervention Fidelity Strategies
		Stylists also received individual training from an African American ancestral storyteller to enhance their ability to pass along their health promotion messages orally. The stylists were given ongoing training from the Principal Investigator and participated in biannual luncheon trainings. Screening message updated with fresh information.	

Outcomes

Primary, secondary, and feasibility outcomes data are presented in **Table 4**. There was significant heterogeneity in outcomes with most primary outcomes being behavioral and four studies reporting clinical outcomes related to BP/ HTN (42, 62, 63, 73). Behavioral outcomes included clinic-based screening (completion/intent), home-based screening (self-exam), provider follow up (treatment, general conversation), physical activity (quantity), and diet (servings of fruit/vegetables and water consumption). Six studies reported significant between-group differences (41, 42, 62, 63, 68, 73) while two reported significant with-in group differences (69, 71). All studies that reported changes in HTN treatment had significant findings. Two articles where each intervention served as the comparison for the other, reported significant outcomes related to cancer screening for both groups, but non-significant results for the diabetes screening (between-group and intervention). The interventions were identical in every aspect except content (specific to disease state) (49, 50).

Feasibility outcomes included as an exploratory focus for this review were not always explicitly stated, but assessed the following areas: acceptability (satisfaction, intent to continue use), practicality (quality of implementation, effects on target audience, ability to carry out, cost analysis), integration, limited efficacy (effect size, intended effects on intermediate variables), and implementation (degree of execution, success or failure of execution). Implementation was the most assessed (n=7) followed by acceptability (n=5), practicality (n=3), and limited efficacy (n=3). Overall, studies reported favorable feasibility outcomes noting barbers/stylists' ability to deliver, barber/stylists' degree of executing the interventions, and clients' satisfaction with interventions. In one study, 98% of participants and all of the barbers expressed a desire to

continue with the intervention (73). One study performed a cost-analysis for a barber delivered hypertension intervention. In the cost-effectiveness model, the intervention was cost-neutral with the intervention costing ~$50 per barbershop patron (73).

Table 4. Outcomes

Author, Year	Setting	Primary Outcomes	Primary Results	Secondary Outcomes	Secondary Results (Significant)	Feasibility Outcomes	Feasibility Results
Hess, 2007	Barbershop	Change in BP Changes in HTN Treatment rate (percentage of hypertensive subjects receiving prescription BP medication) HTN control rate	I: BP fell 16 +/- 3/9 +/- 2 mm Hg (systolic: 149.1 +/- 2.2 to 133.4 +/- 2.2 mm Hg; diastolic: 87.4 +/- 2.6to 78.82.6 mm Hg) C: Unchanged (systolic: 146.4 +/- 2.4 to 146.7 +/- 2.4 mm Hg; diastolic: 87.9 +/- 2.2 to 88.0 +/- 2.2 mm Hg) Intervention effect remained significant (P<0.0001) after adjustment for age and body mass index I: HTN treatment increased from 47% to 92% (P<0.001) C: Unchanged I: HTN control increased from 19% to 58% (P<0.001) C: Unchanged			Implementation	high percentage of haircuts accompanied by a BP recording, as well as BP readings interpreted correctly.
Hess, 2007	Barbershop	Proportion of haircuts in which the barber recorded a BP	81% haircuts barber recorded a BP	HTN control rate	HTN control rate increased progressively with increasing levels of intervention exposure: 20+/- 10.7% to 51+/-9% (p=0.01) Association between intervention exposure and HTN	Implementation	high percentage of haircuts accompanied by a BP recording BP readings interpreted correctly. Barbers correctly staged 92% of BPs

Author, Year	Setting	Primary Outcomes	Primary Results	Secondary Outcomes	Secondary Results (Significant)	Feasibility Outcomes	Feasibility Results
					control remained significant after controlling for insurance status (p=0.01)		
Wilson, 2008	Hair Salon	Self-breast exam (BSE) completion Clinical breast exam (CBE) completion CBE intention (12 months) Mammogram completion Mammogram intention (12 months)	BSE completion: AOR 1.60 (95% CI: 1.2-2.13) CBE completion: AOR 1.20 (95% CI: 0.94-1.52) CBE intention: AOR 1.87 (95% CI: 1.11-3.13) Mammogram completion: AOR 1.21 (95% CI: 0.84-1.76) Mammogram intention: AOR 1.34 (95% CI: 0.9-1.2)			Implementation-degree of execution	37% intervention vs. 10% control reported exposure to breast health messages
Holt, 2010	Barbershop	CaP screening/intent to screen (PSA/DRE) CRC screening/intent to screen (FOBT/FS/CS)	Possible increases in self-reported PSA test and prep for PSA and DRE. I: constantly greater increase in awareness, screening, and prep for FS	CaP knowledge CRC knowledge CRC screening perceived barriers and benefits	Results not significant	Not reported	Not reported

Author, Year	Setting	Primary Outcomes	Primary Results	Secondary Outcomes	Secondary Results (Significant)	Feasibility Outcomes	Feasibility Results
Johnson, 2010	Hair Salon	Increase in fruit and vegetable consumption Increase in physical activity Increase in water consumption	Fruit and vegetable intake increased from pre-posttest for the treatment group No increase in physical activity No increase in water consumption			Not reported	Not reported
Luque, 2011	Barbershop	Likelihood of discussing CaP with healthcare provider (4-point Likert scale (very unlikely to very likely)) CaP knowledge (5pt Likert scale (low to high))	Somewhat likely to very likely Increased from 75% to 85% p<.001 78% reported increase in knowledge	Feelings of worry about CaP (4pt Likert not worried to very worried) Projected PCS modality intention (PSA, DRE, or both)	Somewhat worried to very worried increased from 35% to 45%. p<.001 85%- Both (PSA & DRE)	Satisfaction with the intervention Intention to continue the intervention Expansion and implementation	Participants reported that the materials were easy to understand, had an attractive color scheme, and featured familiar faces printed on the materials. All barbershop clients surveyed reported positively on the contents of the brochure and poster 53% had discussed CaP at least two times with their barber in the last month
Sadler, 2011	Hair Salon	Adherence to Mammography screening guidelines	ITT between groups at follow up not significant ITT for mammography completers in both groups significantly (p<.05) higher at follow up.	Clinical breast exam adherence Participants' awareness	ITT for perception of seriousness of BC as health threat reduced significantly (p<.05) in both	Practicality Implementation-degree of execution	57% of the women reported that health education materials were displayed in their salon

Author, Year	Setting	Primary Outcomes	Primary Results	Secondary Outcomes	Secondary Results (Significant)	Feasibility Outcomes	Feasibility Results
			Adjusting for age (40+) as covariate yielded adherence to screening OR 2.0 (95% CI: 1.03-3.85) times higher for I vs C	and perceptions of their vulnerability for breast cancer	groups, but greater reduction in diabetes arm. OR of listing BC as threat 1.8 times higher in BC arm (95% CI: 1.0-3.1).		57% participants reported that the cosmetologists in their salon were offering health information to their clients 80% of the women felt cosmetologists could effectively carry out intervention
Victor, 2011	Barbershop	Change in HTN control rates (BP measurements and prescription labels) Patron-physician follow up interaction (signed referral card)	Greater HTN control in I vs C Intervention effect: Absolute group difference- 8.8% (95% CI: 0.8-16.9; Unadjusted: p=.04 Adjusted p=.03) Intervention effect: ITT- 7.8% (95% CI: 0.4-15.3; p=.04)	Barbershop-level changes in HTN treatment rates HTN awareness BP levels	Results not significant	Satisfaction with the intervention Intention to continue the intervention Practicality Implementation and Penetration	83% patrons heard a model story during every one or half their haircuts from barber 77% patrons received BP measurement from barber 51% patrons with elevated BP received counseling/physician referral from barber 98% patrons and all 29 barbers would like the intervention to continue Cost analysis- Cost effectiveness- cost-

Author, Year	Setting	Primary Outcomes	Primary Results	Secondary Outcomes	Secondary Results (Significant)	Feasibility Outcomes	Feasibility Results
							neutral for health care system would be $50/patron
Odedina, 2014	Barbershop	CaP screening CaP knowledge Decisional conflict	CaP Screening intention: 12.78 (2.48) to 13.37 (2.13) p=.0001 CaP knowledge: 63.60 (22.20) to 74.00 (16.80) p=0.0021	Intervention effects	Completion of PN Intervention was significantly associated with study completion and CRC screening	Satisfaction with the intervention Limited Efficacy	>90% of the participants indicated that they were satisfied with the video The mean satisfaction rating was 13.67 on a scale ranging from 3 to 15, indicating a highly satisfactory rating for the video >75% of the participants indicated that the video: 1) was useful, 2) was understood, 3) not embarrassing, 4) was not too long, 5) not difficult, 6) was relevant, 7) got their attention, 8) has potential to increase CaP knowledge for African American men, and 9) was credible
Sadler, 2014	Hair Salon	Self-reported diabetes screening	There were no significant differences in rates of diabetes	Knowledge and attitudes	Both groups increased	Practicality	75% reported attending salon

Author, Year	Setting	Primary Outcomes	Primary Results	Secondary Outcomes	Secondary Results (Significant)	Feasibility Outcomes	Feasibility Results
		test in the past year, annual physical exam, and annual eye exam	screening, routine annual screening, and eye exams from baseline to follow-up and between the two arms at follow-up	about diabetes	significantly from baseline in their overall diabetes knowledge: diabetes arm (M = 4.47; SD = 1.67) and breast cancer arm (M = 4.61; SD = 1.54), P < 0.05	Limited Efficacy Implementation-degree of execution	where health education was being offered. 65% reported cosmetologist made health info available 41% shared info w with family and friends 92% feel cosmetologist could effectively deliver diabetes information
Frencher, 2016	Barbershop	CaP screening via PSA test	n=58 completed PSA testing (48%)	CaP knowledge and intention	Changes in knowledge and intention- all significant Intention to screen-increased from 57-73% Overall- no between group differences	Not reported	Not reported
Cole, 2017	Barbershop	CRC screening completion (self-report)	ITT; Mixed-effects regression analysis PN: 17.5% completion; MINT: 8.4%;			Not reported	Not reported

Author, Year	Setting	Primary Outcomes	Primary Results	Secondary Outcomes	Secondary Results (Significant)	Feasibility Outcomes	Feasibility Results
			PLUS: 17.8% PN: AOR= 2.28; 95% CI= 1.38, 4.34; PLUS: AOR=2.44; 95% CI= 1.38, 4.34 2xs more likely for CRC screening completion (PN and PLUS) intraclass correlation coefficient = 0.039				
Victor, 2018	Barbershop	Changes/reduction in systolic blood pressure	I: 27.0mmHg reduction in SBP C: 9.3mmHg Mean reduction in SBP 21.6mmHg > for I than C (95% CI: 14.7, 28.4); p<.001 ITT Intervention effect: 21.0mmHg> for I than C (95% CI: 14.0, 28.0); p<.001	Changes in DBP Rates of meeting BP goals Numbers of hypertensive meds Adverse drug reactions Self-rated health Patient engagement	Mean reduction in DBP 14.9 mm Hg > in I vs C (95% CI, 10.3 to 19.6; P<0.001) I: higher % of meeting BP goals I: Increases in use of antihypertensive meds: 55%-100%; C: 53%-63% (p<.001)	Limited Efficacy Implementation-degree of execution	7 in-person pharmacist visits and 4 follow up calls per participant 6 calls/messages to pharmacist per participant 4 BP Checks per participant by barber 4 health lessons per participant by barber
Victor, 2019	Barbershop	Change in SBP	I: mean reduction= 28.6mmHg C: mean reduction= 7.2mmHg	Changes in DBP	Mean DBP reduction 14.5mmHg> I vs C (95% CI, 9.5−19.5 mmHg; P<0.0001)	Limited Efficacy	11 in-person pharmacist visits (0-6months=4;7-12months= 4)

Author, Year	Setting	Primary Outcomes	Primary Results	Secondary Outcomes	Secondary Results (Significant)	Feasibility Outcomes	Feasibility Results
			Mean SBP reduction 20.8mmHg> I vs C (95% CI: 13.9, 27.7; p<0.0001) ITT intervention effect: 20.6mmHg reduction (95% CI: 13.8, 27.3; p<0.0001)	Rates of meeting BP goals Numbers of hypertensive meds Adverse drug reactions Self-rated health Patient engagement	I: higher % of meeting BP goals (68% vs 11%; p=0.0177) I: Increase in use of antihypertensive meds: 57% to 100% C: 53% to 65% No treatment-related adverse events/deaths I: Greater increase in self-rated health and patient engagement scores	Implementation-degree of execution	4 BP checks per participant by barber 4 health lessons per participant by barber

BP, Blood Pressure; SBP, Systolic Blood Pressure; DBP, Diastolic Blood Pressure; I, Intervention; C, Control; CaP, Prostate Cancer; CRC, Colorectal Cancer; PA, Physical Activity; PCS, Prostate Cancer Screening; PSA, Prostate Specific Antigen; DRE, Digital Rectal Examination; FOBT, Fecal Occult Blood Test; FS, Flexible Sigmoidoscopy; CS, Colonoscopy; BC, Breast Cancer; CBE, Clinical Breast Examination; BSE, Breast Self-Examination; HTN, Hypertension; ITT, Intention to Treat

Quality of Evidence

Global evidence quality ratings for each study appear in **Table 5**. Guided by the EPHPP evaluation process, studies were rated on the following six components: selection bias, study design, confounders, blinding, data collection methods, and withdrawals/dropouts. The global rating for each study was determined based on the total number of component "weak" ratings. One study was rated as "strong," (73) two rated as "moderate," (62, 63) and eleven rated as "weak" (23, 41, 42, 49, 50, 68-72). Many of the studies that had a global rating of "weak" had non-RCT study designs resulting in a "moderate" or "weak" study design rating and components that did not apply/could not be rated accordingly. Because most participants were self-referred, many studies rated "weak" on selection bias. Oftentimes, studies did not report on blinding or on validation/reliability of data collection instruments and therefore received component ratings of "weak." Most studies controlled for confounders during analysis yielding "strong" component ratings.

Table 5. Quality of Evidence

Author, Year	Study Design	EPHPP Global Quality Assessment Rating
Hess, 2007	Non-Randomized Feasibility	Weak
Hess, 2007	Non-Randomized Feasibility	Weak
Wilson, 2008	Cluster Randomized Control Trial	Weak
Holt, 2010	2 group Pretest-Posttest	Weak
Johnson, 2010	2 group Pretest-Posttest	Weak
Luque, 2011	1 group Posttest only	Weak
Sadler, 2011	Cluster Randomized Control Trial	Weak
Victor, 2011	Cluster Randomized Control Trial	Strong
Odedina, 2014	1 group Pretest-Posttest	Weak
Sadler, 2014	Cluster Randomized Control Trial	Weak
Frencher, 2016	2 group Pretest-Posttest	Weak
Cole, 2017	Randomized Control Trial	Weak
Victor, 2018	Cluster Randomized Control Trial	Moderate
Victor, 2019	Cluster Randomized Control Trial	Moderate

DISCUSSION

With the disproportionate rates of obesity-related chronic diseases in the African American community, there is an imperative need to better elucidate strategies for engagement in health promotion interventions. Due to historically unethical medical and research practices in the U.S., African Americans have a longstanding history of mistrust of the medical and research community resulting in low participation and engagement, furthering the gap in health (32). To remedy this, the use of culturally "safe" spaces such as churches, barbershops, and hair salons for recruitment and engagement of African Americans into research studies and lifestyle/behavioral interventions have become increasingly popular (74-76). To this end, designing interventions to be delivered in trusted, culturally significant settings are advantageous. Barbershops and hair salons are highly accessed, cultural staples in the African American community perfectly situated to tackle the health disparities that plague this community.

This is the first review to synthesize the effectiveness and feasibility of obesity-related chronic disease interventions targeted for African Americans delivered in barbershops and hair salons. Eight of the fourteen studies included in this review reported significant results for clinical and/or behavioral outcomes suggesting that interventions delivered in barbershops and hair salons may be effective for reducing risk factors for or improving health outcomes of obesity-related chronic conditions in African Americans. Of these studies, half used an RCT design, the most rigorous methodology for establishing effectiveness. However, only one of these studies received a "strong" global quality assessment rating, while two received a rating of "moderate" and one received a rating of "weak" due to deficiencies in blinding and selection bias, data collection methods and reporting of withdrawals/dropouts, respectively. This coupled with the

variability of duration for interventions point to the need for more efficacious research with considerations for the nuances of community-based study designs.

Among the research with significant results, the outcomes are split evenly between clinical and behavioral. Clinical interventions focused on changes in blood pressure and HTN management while behavioral interventions that can support clinical outcomes included cancer (prostate and colorectal) screening. Furthermore, half of these interventions were delivered or supported by the barbers/hair stylists. Considered together, these details suggest that barbershop/hair salon-based interventions can have a valuable direct or indirect impact in health promotion research. Most studies evaluated feasibility elements, but those were not among primary outcomes nor did any studies compare intervention components such as setting (i.e. barbershop versus church/clinic/other community site) or interventionist (i.e. barber versus clinician/community health worker/researcher). One study where the researcher was the interventionist was replicated by the study team using the barber as the interventionist, but outcomes reported differed (42). Future research would also benefit from examining the association of racial and gender congruence between the barber/stylist interventionist and clients and the desired outcomes. More research is needed to disentangle which components of the interventions are influencing outcomes.

Limitations

There are some limitations of this systematic review. The heterogeneity of the studies (study designs, sample sizes, intervention characteristics, and outcomes) made it difficult to compare the effectiveness of intervention strategies. This was due in part to the inclusion of multiple

disease states, however, there were small number of studies identified through a comprehensive search strategy. However, limiting the search to one disease state or outcome would have further restricted the number of relevant articles for inclusion. Smaller, non-RCT, short-term studies of moderate and weak quality did not support the evidence for or against the efficacy of barbershop/salon-based interventions. Self-reported data could have overpredicted effectiveness of interventions. Another limitation is that seven of the studies were conducted by the same three lead authors (three by one, two by one, and two by one) indicating potential publication bias. Finally, generalizability of the studies' findings is questionable given most studies were conducted in large, urban cities with participants of higher socioeconomic status.

CONCLUSIONS

Health promotion interventions delivered in barbershops and hair salons for African Americans appear to be modestly effective for reducing risk and improving health outcomes for obesity-related chronic diseases. Overall, the literature in this area is limited and varies in foci. The extent to which the barber/stylist is utilized warrants further investigation. Objective measurements could enhance results. While barbershops have been shown to be effective locations for recruitment of African American men, who have been the target audience for such interventions due to the difficulty with recruiting and engagement in health promotion interventions, research in hair salons with African American women deserves more attention. Moreover, interventions that address complex, layered behavior change associated with obesity and diabetes are needed while balancing the appropriateness of desired outcomes (behavioral versus clinical). While all community-based research can be involved and complicated, it can be gleaned from this literature that barbershops/hair salon-based interventions are feasible. The

barbershop/hair salon and to a further extent, the barber and hair stylist, can serve to support the implementation of existing evidence-based interventions, possibly in partnership with the health care system, to address obesity and chronic disease health inequities for African Americans.

CHAPTER 3: STYLISTS' AND CLIENTS' PERSPECTIVES OF THE BLACK SALON-A QUALITATIVE STUDY GUIDED BY THE SETTINGS APPROACH THEORY

BACKGROUND

The hair salon plays an integral role in the lives of Black women and therefore has been a target setting for health promotion research and programming (51, 76). Hair salons are highly accessible geographically in the U.S. providing increased opportunity for outreach and engagement. Initially, as a place frequented by Black women, salons were used primarily as sites for recruitment into research studies (77, 78). Thereafter, individual-level, health behavior interventions were implemented in the hair salon setting (23, 41, 49). Health promotion efforts have more recently acknowledged the salon's capacity of multi-level intervention and described the intersecting roles of the social, cultural, and physical environments as central to achieving health promotion programming goals (76, 79-82).

The "setting" is a foundational component of health promotion that can provide context when designing, implementing, and evaluating targeted, multi-level interventions. In settings such as hair salons, understanding environmental contexts are particularly important for stimulating adoption of health promotion programs. Understanding environmental context is also critical in creating a shift from a more traditional place of health promotion (e.g., classrooms and health care settings) towards the salon as a health promoting setting. Similarly, other non-traditional implementation settings have been used to conduct health promotion research. Most notably worksite interventions have explored environmental factors to increase employee participation in health promotion (83). Additionally, church-based health promotion programs have considered the impact of environmental facilitators and barriers to implementing health programming (84,

85), particularly among Black adults. Understanding and acknowledging the physical, cultural, and social environments in which Black women interact is vital to addressing the persistence of health inequities plaguing this community.

To date, most studies have examined the hair salon setting as part of formative, project-specific research, or a literature review evaluation without a specific focus on Black women. Moreover, these studies focus solely on the stylist's role and perceptions. In a formative study of rural barbershops and salons, a majority of salon owners were interested in increasing awareness of relevant health topics, particularly, reproductive health, to customers (86). While stylists, have traditionally served as gatekeepers to implementing health promotion programming in the salon, the transactional nature of this commercial setting empowers clients to be equal partners in establishing the salon agenda. Less is understood about the clients' perspectives on the hair salon as a setting for health promotion. Furthermore, there is a paucity of literature incorporating theory into the development and evaluation of salon-based health promotion. In their review of hair salons as health promotion settings, Linnan and Ferguson categorized salon-based research studies by each level of the socioecological model and proposed use of the political economy of health theoretical framework to address health disparities for Black women at the macro-level (76). There is a need to elucidate factors of influence for this setting by engaging stakeholders (i.e., stylists and clients) rooted in a theoretical framework.

The Ottawa Charter of 1986 declared that "health is created and lived by people within the settings of their everyday life; where they learn, work, play, and love" (25). From this declaration the settings approach theory was developed to contextualize the environmental determinants of a setting (26). The theory also posits the importance of 'place-specific' assessment to understand the "culture, history, and unique context" of a setting (26). This framework is useful in understanding how the physical, social, and cultural environments of a setting influence health (87, 88). For the purpose of the this study, the environmental determinants include: 1) Physical- elements of the natural/built environment (spatial arrangement, air quality/ventilation), ergonomics, work demands, access to healthy food/ability to eat "healthy," hygienic practices; 2)Social- types and degree of relationships and interactions, social capital/cohesion, social networks, reciprocity of relationships; 3) Cultural- sociocultural norms and values, racial identity/pride, collectivism/communalism (26, 89, 90). Borrowing from ecological perspectives, the physical, social, and cultural determinants of the settings approach theory are interrelated (**Figure 2**). Additionally, there is reciprocity whereby the setting influences the behavior of the people within it and the behaviors of people influence the setting.

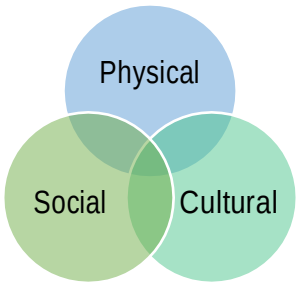


Figure 2. Environmental Determinants of a Setting

The purpose of this qualitative study was to assess the concordance between stylists and clients in perceptions of the salon environment as a setting for health promotion. The findings have implications for salon-based health promotion initiatives addressing health inequities for Black women.

METHODS

Study Design

This qualitative study sought to elicit a broad range of perspectives about hair salons servicing Black women as a setting for health promotion from key stakeholders- stylists and clients. The interview and focus group discussion (FGD) questions were originally drafted by the PI (KNBP), guided by an extensive literature review, and the settings approach theory. The interview guides were reviewed by research team members who identify as Black women (AO, NM, NAZK, JH). Probing questions were added to elicit additional information from participants, at the discretion of the interviewers. Questions were further refined after initial interviews were reviewed by the research team. **Table 6** provides questions from the interview guides by topic area and mapped to the settings approach theory domains.

Table 6. Sample questions by topics area.

Topic Area	**Guide Questions**	**Theoretical Domain**
Stylist/Salon Characteristics	How does or how can the salon environment support a healthy lifestyle?	Physical
	Describe the physical environment of the salon you go to. **	Physical
Stylist-Client Relationship	How would you describe your relationship with your clients/stylist?	Social
	Describe your interactions with your client/stylist (in/out of the salon setting).	Social
"The Black Salon"	What significance, if any, does the salon hold for Black women?	Cultural
	How would you describe "the Black salon" to someone? **	Cultural

** question asked of clients only

Participants

Participants were recruited primarily via social media, the PI's networks, and then subsequently by "word of mouth." Information about the study was posted in groups geared towards Black women, related to Black women's hair (hairstyles, haircare services, etc.) and social media sites. To garner geographic representation, we targeted social media sites/groups and personal contacts in various cities across the United States (e.g., Houston Hair, DMV Hairstylist, Charlotte's Top Cosmetologist, Natural Stylist & Barbers, etc.). Stylist eligibility included being at least 18 years of age or older, a licensed hair stylist, having provided hair care services in a salon for a minimum of 1 year, and having a clientele of >50% Black women. For FGDs, salon client eligibility criteria included being at least 18 years of age or older, self-identified as a Black/African American woman, and received haircare services from a licensed hair stylist. Those interested provided electronic consent, completed a demographic survey via REDCap (64), and then selected an interview/FGD time that best fit their schedule through the Calendly (https://calendly.com) online scheduling site. The study was approved by the University Institutional Review Board (protocol number 2007888863).

Data Collection

Stylist interviews were conducted between October 29, 2020, and December 14, 2020. Semi-structured FGDs with clients were conducted on February 20th and 27th 2021. Interviews and FGDs were conducted and recorded with permission via the University Health Sciences Zoom platform. Participants were able to use a video or the phone-in feature. Informed consent was provided again orally at the start of the interview/FGD, and participants were compensated $25

for their time when the interview/FGD concluded. Stylists were interviewed by a member of the research team (KNBP, AO, NM, FM) with gender concordance observed. FGDs were led by the PI (KNBP) and assisted by a note taker (AO). Interviews and FGDs averaged 1 and 1.5 hour in duration respectively. After each FGD, the interviewer and note taker summarized brief notes to gather overall impressions. Notes from interviews and FGDs were recorded in REDCap (64). Audio recordings were uploaded to Rev (https://www.rev.com), a web-based transcription company and were professionally transcribed. Transcripts were compared to the audio recording for accuracy and then errors or missing data were corrected.

Data Analysis

Thematic analysis of the data was conducted in an iterative, multi-step process (91). Two authors (KNBP, AO) independently reviewed each transcript to familiarize with the data taking brief notes and summarizing large data points. DEDOOSE web application (92) was then used to develop an initial codebook by three of the authors (KNBP, AO, NM). Each transcript was blind coded in duplicate by two of the authors (KNBP, AO) and the codebook was further refined and finalized. Themes were identified in the data set using the DEDOOSE software analytics tools (92) by each coder and were finalized when consensus over thematic saturation was achieved.

RESULTS

Thirty hair stylists completed interviews. Stylists predominately identified as women (83.3%) and Black/African American (96.7%). The majority of stylists were salon owners (66.7%) and located in the East North Central, Midwestern Region of the U.S. (**Figure 3**). A total of 41 women participated in the eight FGDs with an average of five participants per FGD. Clients were generally older than stylists, most had at least a 4-year college degree (89.8%) and resided more broadly in the Southwest, South, Midwestern, and Eastern regions of the U.S. (**Figure 4**). **Table 7** presents demographic characteristics of stylists and clients.

Figure 3. Geographic representation of stylists (zip code).

Figure 4. Geographic representation of clients (zip code)

Demographic Characteristics	Stylists (N = 30) (%)	Clients (N = 39) (%)
Age		
18-24	1 (3.3)	2 (5.1)
25-34	6 (20)	5 (12.8)
35-44	12 (40)	15 (38.5)
45-54	9 (30)	11 (28.2)
55-64	1 (3.3)	1 (2.6)
≥65	1 (3.3)	5 (12.8)
Gender		
Male	5 (16.7)	0
Female	25 (83.3)	39 (100)
Ethnicity[a]		
Hispanic	1 (3.3)	0
Non-Hispanic	28 (93.3)	39 (100)
Race		
Black/African American	29 (96.7)	39 (100)
Native American/Alaska Native	0	0
Asian American/Pacific Islander	0	0
White/European American	3 (10)	0
Salon Owner[a]		
Yes	20 (66.7)	--
No	9 (30)	--
Education level		
≤ High School	-	0
Some College or 2-year college degree	-	4 (10.3)
4-year college degree	-	12 (30.8)
≥ 4-year college degree	-	23 (59)

Table 7. Participant demographic characteristics (N = 69)
[a]N= 29 due to 1 stylist decline to answer
- not applicable to stylists
-- not applicable to clients

Thematic results are presented below in the context of the settings-based theory for health promotion and organized by the physical, social, and cultural environment domains with consideration for the interrelatedness of the determinants.

Physical Environment

The physical environment of the salon presents opportunities and challenges to health promotion for stylists and clients. Stylists discussed how the physical demand of the job results in occupational hazards from standing for long periods at a time and repetitious movements resulting in orthopedic injuries; and frequent and close contact with clients as well as exposure to chemicals/toxins from products increases risk for communicable, respiratory, and dermatological illness. Being self-employed, stylists often find themselves working extended hours without breaks therefore these ailments are often left untreated or under-treated.

".. a lot of us end up with arthritis in some part of our bodies. Um, like, for me, I'm startin' to lose my grip in my hands and my ability to tell temperature differences because of me using my hands in hot temperatures so frequently- starting to lose that sensitivity in my hands. And, um, a lot of us have back issues. We have… problems with our feet, our hips. We get varicose veins, and that's all because we're standing anywhere from four hours on a light day to 14 hours on a heavy day. That's, like, with no break whatsoever, and our hands are constantly moving the whole time. A lot of us become... Some of us even who have perfect vision going into doin' hair, end up having to wear glasses and contacts because we focus up close for so long, so we become near-sighted. some people even become allergic to color or develop eczema because of the color and touching it with their hands, so it's a lot-it's a big occupational risk." -S14

Stylists also mentioned working long hours in spaces that may not be equipped to store fresh foods or lacking time to eat well balanced meals throughout the day. Therefore, they rely on snacking, fast food, or eating shelf stable, convenient foods.

"Most of us are either obese because our eating habits are trash. We make money according to how many services we can perform in a day, so some of us are booking people every 15 minutes, every 30 minutes. We have very poor eating habits, so a lot of us are over-overweight." -S14

"... You eat what is in front of you and what you can get. That's the reason why when that man comes in with that fried chicken and those potatoes, that's the reason why they are eating what they are eating and why they have what they have at the time because it's, that's in front of them. That's what they're able to eat in between clients and it's easy food to eat without a utensil." -S1

The above-described factors might inhibit a stylist from engaging in health promotion programming. It also illuminates a need to design interventions that focus on the health of stylists and occupational hazards associated with the job. Similarly, clients who receive services after work or who require lengthy service appointments find themselves without adequate healthy meal options and resort to snacks provided by the salon (complimentary or for purchase), fast food options, or items from local food vendors who usually sell high-caloric, high-fat meals.

"Halfway through getting your hair done, here comes somebody on Friday trying to sell you a fish dinner."-C470

When asked how the physical salon environment can better support a healthy lifestyle, participants were in favor of having healthy snacks and water available as well as soliciting vendors that sell healthier options.

"I can't stand for 16, 15 hours if I'm not eating right...and I'm eating junk when I'm at work. We keep fresh fruit in the salon to promote, you know, bananas, water, no sodas. I think that that's part of our responsibility…"-S36

"We have to consider what we have in the salon because a lot of people use the salon. You got the snacks, you got the pop, you put other healthier options there for them. We used to have a guy that came by and he only sold salads and fruits and things of that sort, you know. Just giving them other options, and not making the salon a place where we promote unhealthy lifestyles."-S4

"My stylist had a smoothie franchise in the shop. So, she's very health conscious. They do make me feel good about myself when I get there. They don't have sodas and stuff, they have water."-C328

Participants discussed the impact of the structural arrangement of the salon. Salons with multiple stations in an open space allows for sharing of information and resources among patrons. However, some discussed a lack of privacy that comes from cross communication in a shared space.

"…so, typically, when we were working in the same space. So, you will hear what someone else is saying- so it's always funny when they say, "I'm so sorry for ear hustling or for getting in your conversations." It's like, "We're going to all hear anyway." So, we open up the dialogue for the entire space for clients to share their experiences, what they've read, researched, they've tried…" -S3

"...if I was having a conversation with somebody sitting in the lobby or a waiting area of a restaurant and somebody nearby jumped in and said, "Oh, I can tell you where to go for that." Or "I had that happen to me." I'd be offended. But yet when you're in the beauty salon, you know, if I'm having a conversation with one person and I'm telling them about someone, and somebody else from behind jumps in, and then somebody else... I don't mind, I don't know why, but you're just not offended with talking to people you don't know or don't know very well…"-C416

"Because you're in an open salon, I can't really have a private discussion. I mean, I can whisper a little bit, or I can read between the lines, you know, when we're talking about something maybe they don't wanna talk about with other people around. That may be one of those things when it comes to someone's health." -S6

I personally find that those are a little more uncomfortable because some of the conversations and the topics that come up or situations that happen. It's kind of like everybody is kind of being forced into this experience. It's just kind of uncomfortable. I didn't really like that."-C375

Conversely, single suite salons offer greater intimacy and a more personalized experience. They have become increasingly popular over the years offering stylists more control over the environment.

"Like when the pandemic first started [my stylist] was still in an open salon, and then [my stylist] decided, to become a part of like a salon suite studio. So, she has her own suite and that's been helpful. It is very, very small, but it works as far as like the pandemic and safety and precautions and everything…it has been nice because I am able to get in and out."-C16

"The atmosphere. This one is more personable, more private. I can control my environment."-S28

Social Environment

All the participants acknowledged the importance of the social environment of the salon. The social environment provides opportunities for interactions between all who patron the salon including stylists, clients, and local entrepreneurs. The salon is a place for exchange of information, ideas, and networking among women from different backgrounds, socioeconomic levels, and ages.

"So, there's definitely sharing of information and resources and stories and experiences amongst kind of everybody, like you said, you got the client that's a doctor and I'm sure you have other clients that have other things that they're experts in or have experience in. And so, it is common for people to share information or resources." -S5

"…but what I found most recently in my salon is you never know who's under the hairdryer. Someone brought up an issue about potholes in their community not knowing that the aid to their council person was under the hairdryer. And so that was a way for them to have that

conversation to figure out, "Okay. This is who you need to call or, you know, call me directly and, you know, we'll get it taken care of."-CF8

Participants also talked about the social support that is derived from the salon and the reciprocal nature of relationships. Participants noted receiving encouragement and confidence from each other.

"…when I started working out and stuff I started, of course my clients see me, you know, and I talk about it and then, you know, but I do have a lot of clients too, that they work out, they eat good, you know, they eat healthy or whatever. And it's kind of a place where you could just share information and they share information with you that you might have not knew about." -S5

"[It's]a place of peace, even as a place to build, boost your confidence… when my stylist was in a salon, right after they got finished doing people's hair, everybody chime in on how beautiful, you know, that person looked to, you know, to boost them up, to let them know that they are queens. And, you know, every time I got out of that chair, they'd be like, "Girl, you look good. Stuff like that makes you feel really, really good about yourself. And I think that's one of the benefits. The community that level of peace and confidence when you leave."-C209

The social environment can transcend beyond the physical boundaries of the salon space. Oftentimes, clients and stylists have a familial connection, share the same social circles, or stylists provide services to members of the same family. Stylists and clients may also, at a minimum, interact via social media.

"…like they're my friends on Facebook and my Instagram page and even sometimes after they don't even come to me anymore, we still interact, you know, via Facebook or through social media or text or whatever. And I still maintain a relationship, even some that are not my clients, like from the other salons that I've worked in. I still have that open communication with them."

-S35

we follow each other on like all different platforms on social media, and we're not like friends, friends, but like I said, we follow each other on different platforms on social media and she'll like invite me to things and invite me to different events."-C13

Some stylists described strong relationships with their clients. Stylists talked about how the connections are instantaneous and persist over time. Clients also acknowledged feeling a strong bond with their stylist even if they did not interact frequently outside of the salon setting.

"…it's almost like kinship, even the ones that I just... like, even the ones that are first-timers, it's almost like a kinship there. I feel like it's tribal. So, it's like, I feel like we can discuss things. It's intimate. It is a loyal based relationship." -S31

"I do not have a relationship with my stylist outside of the salon. However, when I am there, we talk about everything. We can pick up our conversation right back from where we ended last appointment, we talk about marriage stuff, motherhood stuff, spiritual stuff, financial goals we're working on. So, our conversations are really broad. We aren't just talking about hair."-C272

Cultural Environment

Participants highlighted that salon patronage was about "more than just hair." They described how the Black salon is an extension of the Black community. The Black salon represents a space where there is an inherent "sisterhood" for Black women.

"Black salon culture is a community. We're concerned about the well-being of everybody. there's more of a community within Black salons. My clients actually get to know each other because of the community with a Black salon…. It's a community. The Black community carries on into the barbershops and in the salons. It's a community." -S14

"I would say that the black salon, I would describe as a transient sisterhood and in that, when you are in that space with whoever is in that space with you… And so, the experience that you get in going there is a welcomeness from the beginning. You engage and then at the end to all your new friends and sisters, you say, bye, see you next time. And then you don't engage in that again until you come back. And so, you know, it's kind of like you're being hugged or embraced by sisterhood for the time that you're there until you leave again."

The Black salon was highly regarded by all participants as a staple in the lives of Black women. Participants view the Black salon as a "safe" space where Black women can be their selves free from judgement and societal pressures of cultural assimilation and censorship.

" It's where you can come and be as Black as you want, as authentic as you want. If you wanna use slang, you can use slang…. or use Black colloquialisms and things that we say as Black

people and not feel judged because she's in, like...I feel like us Black people, we have our own language…. the Black salon is a place where you feel comfortable just being your authentic self. You can take off the mask. Said all that to say, in Black salons, you can take off the mask. You don't have to be somebody else. You can be you." -S14

I think so, because I think like the, the mask can be taken off. I think a lot of times when we navigate the world, we have a mask on, we can't always be our true authentic selves because you don't wanna be maybe that angry black woman or, or she ghetto or this or that. But I feel like, with my salon, I tried to create a space where you can, take that mask off and be yourself, you know, good, bad or indifferent…so I think that, that whole trust is there because you feel like you can kinda be who you are in a judgment free type of zone where you may not be able to get that space at work or you may not be able to get that space in other kind of avenues of your life necessarily."-S7

"It is the safe space. It is this one little spot that feels like it's guarded and protected from the rest of society, from the rest of the world, from any other pressures. Like in this bubble, you get to just be, you get to laugh, even if all hell is breaking loose...You get to give hugs and also get hugs, right? Like it's just this really safe space where you get to just be.

And I think for black women that is so special because it takes a real vulnerability to do that. And in times in life, I feel like vulnerability is a privilege."-C272

DISCUSSION

This study addresses gaps in the health promotion literature by exploring the physical, social, and cultural environmental factors of the Black hair salon as a venue for interventions and programs. To the best of our knowledge, this is the first study to describe as well as to compare and contrast stylists' and clients' perceptions of the Black salon as a setting for health promotion which was guided by a theoretical framework. These findings are relevant to the design of future salon-based health promotion programs wherein physical, cultural, and social context inform on program planning. As we design, test, and implement multi-level interventions in the salon setting, these findings provide valuable insights into how to leverage strengths and address challenges inherent to the salon environments.

As health inequities for Black women in the U.S. persist, interventions should be designed with understanding context in which people live their lives; settings in which they frequent (where they live, work, pray, and play). Our data support that the hair salon, highly accessed by Black women, provides opportunities for engagement in health promotion activities in the Black Community. However, researchers and programmers must move beyond surface-level interventions that do not incorporate elements of the salon environment more deeply including the physical, social, and cultural constructs of the settings approach theory. The salon environmental factors identified from this study aligns with key aspects vital to successful settings-based health promotion programs.

Stylists and clients were generally concordant on many components of the physical salon environment. Although several concerns related to the physical environment detrimentally

influencing health were commonly expressed by the stylists (e.g., lengthy workdays and chemical exposures), clients were mostly concerned with lengthy appointments hindering healthy eating. Areas of opportunity to promote health were identified. Stylists and clients agreed the salon could provide healthy snack options and water instead of calorie-dense items like chips and soda. A theme among clients was the favorable trend of stylists not overbooking or booking multiple clients increasing efficiency. Stylists also acknowledged how time efficiency is seen as professional by current and potential clients. There was discordance between and among stylists and clients about the structural environment. Open, shared space salons offer potential for increased reach to higher volumes of clients at a time and peer influence and support. Private, single suite salons provide greater privacy and confidentiality for tailored interventions.

Another theme of high concurrence was the Black salon as a source of social support and social interaction. Stylists felt deeply connected to their clients and strong sense of responsibility for their well-being. Additionally, clients noted the unique nature of their relationships with their stylists. Some stylists and clients interacted beyond the salon setting. However, even when interactions were limited to service appointments, clients felt a closeness to their stylist that differed from other professional relationships. Because social support has been associated with improved health outcomes (93) further exploration of the social capital and social networks of people who interact within the Black salon setting is warranted.

Finally, stylists and clients shared perceptions of the cultural environment. The Black salon was described by all participants, regardless of stylist gender, race, or region as a sacred setting in the Black community- particularly for Black women. Health promotion researchers and programs

must be sensitive to these cultural underpinnings. Community-based participatory approaches would be useful in this setting to establish trust (particularly for researchers and programmers that are not members of the Black community) and develop shared goals and processes that align with the priorities of the salon stakeholders and the cultural environment. Shared power, transactional relationship, and reciprocity between stylists and clients allows for inclusive and participatory intervention planning and implementation where all stakeholders' priorities are given full consideration.

Limitations

Due to the COVID-19 pandemic, data collection was shifted from in-person to virtual. Virtual data collection allowed for broader participation giving us a more representative sample than in-person data collection which would have likely been restricted to residents of Arizona. Conducting FGDs in a virtual space may have limited the organic nature of FGDs. At times, participants were more formal, and some called in or chose to participate without their cameras turned on which limited the ability to read body language and social cues. However, participants utilized the chat feature to answer questions and engage with one another (exchanging contact information and sharing resources that were discussed). Some participants may have even felt more comfortable to share given the added layer of anonymity. Client participants were also highly affluent. This could have been a result of our recruitment efforts targeting social media groups of Black women who work in public health and members of the National Pan-Hellenic Council- both consisting of college-educated Black women. While this could limit the generalizability of our results, however, chronic disease health disparities persist for Black women even at higher socioeconomic status (94).

CONCLUSIONS

This study expands our understanding of using the hair salon as a health promotion setting for Black women and hair stylists alike, including more in-depth knowledge of physical, social, and cultural influences on health promotion activities. The Black salon is uniquely situated to expand reach and increase access of interventions targeting Black women and achieving health equity. Use of the settings approach theory may help researchers and public health practitioners move beyond the "captive audience" explanation of salon setting convenience and look towards developing salon-based interventions, rather than salon-placed interventions, to promote health.

CHAPTER 4: HAIR STYLISTS AS LAY HEALTH WORKERS- A QUALITATIVEEXPLORATION OF CLIENTS' PERCEPTIONS

BACKGROUND

Lay health workers (LHWs) are members of a community who perform functions related to health care delivery such as health education, patient navigation, health promotion, and support for health behavior change (95). Traditionally, they do not have formal, 'professional' training or education beyond the scope of the intervention for which they are involved. As members of the target community for which an intervention is designed, they bridge the gap between healthcare systems, intervention programs, and vulnerable, underserved communities (95). The use of LHWs have become increasingly popular in efforts to reduce health disparities among racial/ethnic minority populations. LHWs have been effective in health promotion programs ranging from improving health literacy (96) to increasing access to care (97) to health behavior change (98).

Initiatives to address health disparities among Black women have adopted the LHW model. Utilizing trusted members of the Black community such as church pastors as LHWs have been effective in health promotion and education efforts (99). Building upon the success of pastor-led, church-based health promotion, hair stylists have been enlisted to host health promotion and provide health education for their clientele. Black women routinely patron the hair salon oftentimes receiving services from a particular stylist for years. This established relationship and regular interaction provides access and opportunity to deliver health messaging and interventions. Moving beyond the salon as merely a site for study recruitment, it has been demonstrated that involving the stylist in the intervention enhances effectiveness (81). Stylists

have been described as “natural helpers” who have a unique and close bond with their clients making them well positioned to serve as LHWs. Soloman and Linnan (82) observed that health topics were commonly discussed among stylists and clients and stylists and it has been documented that stylists are interested in and comfortable discussing health issues with their clients. As a result, researchers and programmers have assessed stylists’ interests in health promotion activities from willingness to host programs (52) to health topics of interest (100) to strategies for delivery (50, 81, 101).

Given that most stylist-led health promotion research has focused on stylists’ willingness and interest to serve as LHWs, little is known about the acceptability of salon-based health promotion using stylists as LHWs from the perspective of Black female clients. Further, there are no studies that elucidate the level, degree, and context of influence stylists have on their clients that could impact receptivity of stylist-delivered health promotion program and ultimately implementation. To that end, the purpose of this qualitative study was to explore to what extent hair stylists influence their Black female clients and clients’ preferences for their stylist’s role in salon-based health promotion programming.

METHODS

Study Design

We employed a qualitative research design to better capture information directly from constituents that may not be conveyed in a survey or other quantitative data. Focus group discussions (FGD) were the preferred chosen methodology for collecting data by leveraging group dynamics to get the views, opinions, and experiences of as many individuals as possible.

The FGD guide was informed by an extensive review of recent literature on stylist-engaged health promotion, and domains of importance as determined by research team members who identify as Black women (KNBP, NM, AO, NAZK, JH). FGD questions focused on clients' perceptions of stylist influence, stylist identity and its impact on relations (conversations, advice, etc.), and stylist's role in health promotion. Additional probing questions were included to facilitate further discussion. **Table 8** provides sample questions and probes from the moderator guide.

Topic	**Sample questions and probes**
Getting started	• Tell me about your stylist? o What do you like about them?
Stylist identity	• How does your stylist's age/gender/race/ethnicity impact your relationship? o How does it impact your interactions? o How does it impact the types of conversations you have?
Stylist influence	• What influence does your stylist have on you? o What kinds of things do you seek/take advice from your stylist on?
Stylist role in health promotion	• If your stylist was involved with a health promotion program as a client what would you be receptive to? o How would you feel about your stylist talking to you about health topics? o How can stylists help improve or health support the health of their clients?

Table 8. Sample interview guide questions and probes

Participants

Eligible participants were Black women, age 18 and older, who receive haircare services from a licensed hair stylist. Social media was the primary recruitment mechanism. Study recruitment announcements were posted to the PI's (KNBP) social media pages and in groups geared towards Black women (National Pan-Hellenic Sororities, "Black Ladies in Public Health", "Black Sistahs Making Friends, etc.), and groups related to Black women's hair (hairstyles,

haircare services, etc.). To garner a geographically representative sample, we targeted social media sites/groups representing cities across the United States (DFW Hair Game, Atlanta Black Hair Styles, etc.). Eligible and interested individuals provided electronic consent, completed a demographic survey via REDCap (64), and then registered for a FGD session through the Calendly (https://calendly.com) online scheduling site. The study was approved by the University of Arizona Institutional Review Board (protocol number 2007888863).

Data Collection

FGDs were conducted and recorded on February 20th and 27th 2021 via the University of Arizona Health Sciences Zoom platform. Participants reconsented orally at the start of the FGD and were given the option to use the video or the phone-in feature. FGDs were led by the PI, assisted by a note taker (AO) and lasted 1-1.5 hour. After each FGD, the interviewer and note taker summarized brief notes to gather overall impressions and participants received $25 for their time. Notes were recorded in REDCap (64). Audio recordings were professionally transcribed through Rev (https://www.rev.com), a web-based transcription service and checked against the original audio recordings for accuracy.

Data Analysis

The data was thematically analyzed in a multi-step process (91). Transcripts were reviewed by two members of the research team (KNBP, AO) to familiarize with the data. Brief notes were taken and large data points were summarized. An initial codebook was developed by three of the authors (KNBP, NM, AO) using the DEDOOSE web application (92) to code and organize the data. Each transcript was blind coded in duplicate by two of the authors (KNBP and AO). The

two coders met to discuss discrepancies and the codebook was further refined and finalized. Codes from the data set were collated by the DEDOOSE software analytics tools (92). Themes were identified and finalized by two authors (KNBP, NM) when consensus over thematic saturation was reached.

RESULTS

Eight FGDs were held with a total of 41 women participating (average of five per group) residing in the Eastern, Midwestern, Southern, and Southwestern regions of the U.S (**Figure 5**). Most clients had at least a 4-year college degree (89.8%), health insurance (92.3%), and a primary care physician (89.7%). While most rated their health as very good or excellent (66.7%), over half reported being diagnosed with a chronic condition (hypertension/high blood pressure, mental health condition, prediabetes/Type 2 diabetes, asthma, cancer, other). Demographic characteristics of participants are presented in **Table 9**.

Figure 5. Geographic representation of participants (zip code)

Demographic Characteristics	Clients (N = 39) (%)
Age	
18-24	2 (5.1)
25-34	5 (12.8)
35-44	15 (38.5)
45-54	11 (28.2)
55-64	1 (2.6)
≥65	5 (12.8)
Gender	
Male	0
Female	39 (100)

Ethnicity	
Hispanic	0
Non-Hispanic	39 (100)
Race	
Black/African American	39 (100)
Native American/Alaska Native	0
Asian American/Pacific Islander	0
White/European American	0
Education level	
≤ High School	0
Some College or 2-year college degree	4 (10.3)
4-year college degree	12 (30.8)
≥ 4-year college degree	23 (59)
Insurance status	
Yes	36 (92.3)
No	3 (7.7)
Primary Care Provider	
Yes	35 (89.7)
No	4 (10.3)
Self-Rated Health	
Excellent	3 (7.7)
Very Good	23 (59)
Good	11 (28.2)
Fair	2 (5.1)
Poor	0
Chronic Condition	
Prediabetes/type 2 diabetes	4 (10.3)
Hypertension/high blood pressure	12 (30.8)
Cancer	2 (5.1)
Asthma	4 (10.3)
Mental health condition	5 (12.8)
Other	4 (10.3)
None/not applicable	17 (43.6)

Table 9. Participant demographic characteristics (N = 39)

Below we present themes emerging from participants' perceptions of: their stylist's influence on their lives- the context and degree of influence; the impact of stylist identity (age, gender, and race) on influence and interaction, and preferences for their stylist's involvement in salon-based health promotion. In some instances, identified themes applied to multiple domains or subdomains of interest.

Trust

The theme of trust was pervasive throughout our discussions. Trust shaped the level of influence stylists have over clients' lives. Trust is developed by stylists by providing exemplary haircare services. Once trust is established, clients are receptive to guidance from their stylist in other areas of their lives.

" I trust my stylist's opinion and her advice. She gives good, um, she gives me suggestions on what hairstyles I should get and how I should take care of my hair. And she also gives me financial advice from time to time. So I trust what she has to say." C287

"You have to have a certain amount of trust in that person to even let them do your hair. And that trust for me, translates over into other areas, but I would at least listen, consider, and potentially try something that she suggests." FGD2

While participants felt strongly that trust is earned, an inherent trust that comes from gender and racial congruence was also noted. This trust extended beyond the ability of a stylist to care for hair textures associated with Black women to comfortability interacting and engaging with a stylist that was not a Black woman.

"*I have gone to a man before for hair care when my hair was straight and he a wonderful job, but yeah, I'll automatically trust a Black woman before anything." C93*

"I really don't feel comfortable with another race or a gender on my head. So I would say, no. I just would not feel comfortable even being able to trust the conversations that we may have. And can we have decent conversations as far as race is concerned, race relations, anything like that, if they weren't a black person?" C34

Relatability

Interrelated with trust was the theme of relatability. For clients, stylists that shared the same gender and/or racial identity could better relate to issues Black women face. The theme of relatability mostly centered on preferences for race and gender. As one participant stated *"I mostly was looking for someone that looked like me because I feel like I would trust them. And in that they would innately understand the Black woman's experience." C93*

Participants discussed how their interactions were impacted by stylist's gender. Some clients noted male stylists were either not as engaging or conversations were limited to 'surface-level' topics such as local activities/events, fashion, or relationships.

"My relationship with him, it was cool, but I still feel more comfortable having a female stylist, I guess because we can relate on so many different levels and it's easier to talk to her. He was easy to talk to you too. Don't get me wrong, but it was just different, you know." C209

Most participants felt strongly about their preference for a Black woman stylist. Clients were more inclined to take advice from stylists that are Black women not only related to hair, but on other topics as well. They mentioned shared lived-experiences, unique to Black women, as vital to establishing a deeper relationship.

"I do prefer, um, an African-American woman. I do feel a, more of a connection and I can talk more about other things than just hair and you know, about, you know, how life is even affecting my hair." C41

"I've always had black stylists and she's a woman. I don't know if it will make a difference, but I know what a black woman, if I'm talking about certain things, she relates to them and can give an insight." C164

One participant, who receives hair care services from a White woman spoke about the differences in how interactions play out in the salon setting. She highlighted that her stylist is unable to relate to issues in the Black community and consequently is disengaged from such conversations.

"So when other people are in and we're talking about general things in the black community…. she can't contribute to the conversation. She doesn't fit in… she can't add to the conversation." C30

Credibility

Participants acknowledged that stylists are professionals and therefore yields a certain level of credibility. Clients value stylists' 'professional' opinion and as a result give consideration to their recommendations and referrals.

"I think people find them credible….they're a professional so to me, it makes them credible. And [if] they suggest someone to come in and discuss a product or have a pamphlet about anything they feel strongly about they're kinda vetting to have in their salon, I would think that whoever is pushing a product or, some type of service would find the referrals of a salon owner a good avenue to get people who will be probably loyal to their products because it's a bond that you don't really get a lot of other places." C346

"[She's a professional] I think there's probably not a thing that [she] could not recommend to me that I wouldn't at least, look into." C446

Credibility was also associated with a stylist's age. Clients described relationships with stylists that were older as "maternal" in nature or that of an "aunty" or "older sister." Some clients felt they could talk to stylists who were older about life experiences and seek advice. Younger stylists were sometimes described as less mature and/or and leaving clients less inclined to respect their opinion.

"With the older women I tended to lean on their wonderful, fantastic life experience and, sort of what they thought about their historical perspectives and points of view." C446

Role model

Clients felt it is important for their stylist to model desired behaviors. For clients, it is not enough for stylists to "talk the talk," but to also "walk the walk." Clients are more likely to 'buy-in' to recommendations and take advice from their stylist if their stylist is engaged in the behavior

themselves. Participants noted that it would not feel genuine for their stylist to promote something that they themselves were not actively participating in.

"My hairstylist is really big into diet and eating habits. She's recommended a couple of cleanse and food products to me that I take her recommendations about. And I mean, recommend them to me, not based on my hair, but just based on what she does personally for herself." C317

"My beautician is pretty healthy, like I can tell that she works out and things like that. So, just in my personal journey to be the best at 40 in a couple of months asking her questions about what her workout routines are, things that have worked for her; health, diet, things of that nature, since it's obvious that she takes care of her body and her skin." C386

Role with health promotion

When reflecting on their preferences for stylist involvement in health promotion programming, participants acknowledged the "natural" role hair stylists already play. Participants discussed how stylists have been informally promoting health particularly as "therapists" or counselors" while listening to the concerns of their clients.

"Stylists for so long have been, support from a mental perspective, like, you know, you go to the salon and you just are able to have a conversation about a myriad of things. They already are almost like a behavioral health or a mental health resource" C93

However, while participants reported talking to their stylists about their personal health conditions, many did not believe their stylist should deliver health messaging about chronic diseases unless it was linked to hair. Doing so was deemed out of the scope of the stylist's expertise. Clients were not opposed to stylists serving in a "triage" capacity and making a referral to a healthcare provider for follow up or having an expert present in the salon to defer to.

"I would say that if it's coming out of the mouth of the stylists, and they're providing some guidance, that it would make more sense for it to be tied to my hair, skin or nails. But I don't think that means that if they were also guiding me to another expert, about another thing that I wouldn't feel good about that, right? I don't necessarily want my hairstylist to be telling me about how to manage diabetes, because that doesn't make sense to me. But I think when you look at health disparities in the health of our community, we might be over estimating how often people go to the doctor. I go to my doctor all the time. So, I don't need my hairstylist to talk to me about that, personally. But if we're looking at the broader picture of our community, people are going to the hairstylist and they're not going to the doctor, I promise you that. So, if our hairstylist could say, " when's the last time you went to the doctor?" You don't have to tell 'me' about diabetes, but encouraging our people to go to the doctor, if that's where that information should be coming from, I think would be an appropriate use of that platform." C284

Participants also talked about the limitations of stylists engaging in salon-based health promotion. Participants shared their experiences with stylists having various backgrounds, education levels, levels of professionalism, and the balance of altruism and profit. Not all stylists are perceived by clients as compatible to serve as lay health advisors.

"I think that there has to be a, just a certain standard, and not saying that no one, isn't professional, but I think that there has to be a certain level of professionality amongst the stylist for you to even present this information to them. And even though this all sounds great, we do have to acknowledge the fact that this is not something that every stylist is going to be able to, to be best suited for." C1

DISCUSSION

Hair stylists can play a central role in health promotion and education for Black women in the U.S., but until now clients' perspectives of factors of influence and stylist involvement have not been explored. To design and implement effective health promotion program, consideration must be given to understanding the recipients' perceptions. To our knowledge this is the first qualitative study exploring clients' perceptions of the level and degree of influence hair stylists have on their clients, what factors lend themselves to such influence, and the context stylists should engage in salon-based health promotion.

Our findings confirm that trust is a significant factor for engaging with Black women and hair stylists are trusted members of the community (22, 76). Trust between a Black woman and her hair stylist is built over time, through the frequency and regularity of service visits, and demonstrated 'successful' outcomes. Gender and racial congruence for participants was profound and centered on trust and relatability. When it comes to health promotion consideration must be given to who is communicating health information that is relevant to Black women.

Black women may not be comfortable talking to men or non-Black stylists about certain health topics.

There is opportunity in targeting hair stylists first as the recipient of health behavior interventions. Clients may be more accepting of health promotion and education from stylists who have gone through an intervention themselves and can serve as peer coaches. Interventions that target hair stylists and their personal health conditions can set the stage for a 'domino effect' that can reinforce a health promotion intervention.

Despite well documented interest of hair stylists to participate in salon-based health promotion (86, 101, 102), there was mixed feedback regarding the appropriateness of stylists' involvement. Clients' beliefs regarding the appropriateness of stylists talking about various health topics particularly those not directly related to hair warrants further consideration when designing salon-based health promotion programs. Clients receptivity to health messaging and intervention effectiveness may be impacted by a stylist's role in the intervention delivery. Providing trainings for stylists (with documentation/certification), supporting materials from professional health organizations, and capitalizing on stylists' professional expertise by linking hair/skin/scalp health to other health issues.

A potential limitation of this study is the participants in this study had higher levels of education, were insured, had access to a primary care physician, and high levels of self-rated health. Given these variables, it is within reason to question the generalizability of the study findings. This affluent study sample may be due to the recruitment methods employed that targeted social

media groups of Black women who are members of the National Pan-Hellenic Council and women who work in public health- both consisting of college-educated Black women. However, it is also important to underscore that most of the study participants had been diagnosed with a chronic disease and chronic disease disparities for Black women persist despite higher socioeconomic status (94). And while our sample was geographically representative, we recommend future exploration of clients' perceptions of stylist-led health promotion include greater socioeconomic distribution.

CONCLUSIONS

Findings from this study can inform future development of acceptable health promotion programs delivered by hair stylists. Health promotion researchers and programmers should utilize community-based participatory research (CBPR) approaches to solicit feedback from stylists and clients alike. When designing intervention CBPR can facilitate collaborations to 1) identify clients' health topics of interest, 2) develop health education materials with a hair-health connection in consultation with stylists and/or dermatologists, and 3) partner with healthcare providers to provide a clinic-community linkage. This study illuminates the importance of exploring the perceptions of clients to improve the design, implementation, and evaluation of salon-based, stylist-led health promotion interventions.

CHAPTER 5: CONCLUSIONS AND FUTURE DIRECTIONS

DISSERTATION CONCLUSIONS

Evidence-based interventions have improved obesity-related chronic disease outcomes for most of the U.S. population, yet health disparities for Black women persist. To mitigate these health disparities, researchers and practitioners must leverage trusted community partners and settings to engage Black women. Hair salons represent culturally 'safe' spaces and hair stylists are respected Black women. The Black hair salon is an extension of the Black community whereby relationships are forged and information is disseminated and a viable setting for health promotion and education. The Black hair salon has grown in popularity over the years to reach Black women for health promotion.

This dissertation provides valuable considerations for designing and implementing salon-based health promotion interventions. Taken together, the aims of this study, guided by the settings approach theory, advances understanding of the Black hair salon as a health promoting setting. In Chapter 2 (Aim 1), a systematic review of obesity-related chronic disease interventions delivered in barbershops and hair salons revealed similarities and differences in barbershop and hair salon interventions. Success of barbershop intervention outcomes were not contingent on health topics specific to men (i.e. prostate cancer versus hypertension), while in salons significant outcomes were reported for breast cancer screening but not for diabetes screening. Although study designs, intervention components, and outcomes varied widely, most interventions were shown to be modestly effective. However, there was a paucity of data across studies on which elements of the intervention were driving outcomes and feasibility (client satisfaction and stylist

implementation). Further, fewer interventions were delivered in salons with a focus on obesity and diabetes. Given the concurrent obesity and diabetes epidemics, it is imperative that more strategies are explored to expand beyond interventions to increase knowledge and awareness.

Findings from Aim 2 assessing the physical, social, and cultural environments of the hair salon as a setting for health promotion identify potential barriers and facilitators to implementing health promotion in the salon. These determinants need to be considered when conducting salon-based health promotion. Notably, hair stylists encounter occupational hazards that may impede their ability to lead health promotion activities. Consideration should be given to empowerment models that would prioritize stylist health. Also, the structural layout of the salon should be assessed to gage opportunities to capitalize on social interactions that take place in 'open' salons or on the intimacy of 'single suite' salons. Aim 3 findings provide indicators of stylist influence and clients' preferences for their engagement as a lay health worker. While stylists exert influence over their clients' lives (beyond haircare), the degree to which is determined by stylist characteristics and behaviors. The findings of Aims 2 and 3 illuminate the need for researchers and practitioners to utilize CBPR approaches to assess salons and collaborate with stakeholders to identify preferences for health promotion. Not unlike the heterogeneity of Black women, each salon possesses its own unique culture. Identifying preferences of clients and compatibility of stylists to engage in intervention delivery are imperative to developing effective salon-based health promotion programs.

FUTURE DIRECTIONS

Hair salons offer both opportunities and challenges for health promotion research and programming. Health promotion researchers and practitioners when operating as transformative agents can stimulate stakeholders (stylists, clients, etc.) and change the salon setting itself. This shift from using the salon merely as a passive channel of communication can enhance chronic disease health promotion efforts and reduce health disparities among Black women. To accomplish this, using the settings approach theoretical framework can be instrumental in disentangling factors that may serve as barriers or facilitators to intervention implementation and success. As noted by the findings from Aim 1, there is a dearth of evidence for the effectiveness of diabetes and obesity interventions delivered in hair salons. Additional research addressing complex behavior change interventions in hair salons with attention to study design rigor is warranted.

Qualitative findings support the need for collaborative approaches that consider the perceptions and preferences of multiple stakeholders. The consumer-based nature of salons engenders an equal power dynamic between stylists and clients alike. The settings approach theory complements a CBPR approach in that it is less prescriptive and encourages 'co-learning' and shared decision making throughout the design, implementation, and evaluation of settings-based health promotion. Hair salons are not fundamentally focused on 'health,' therefore it is critical to balance the business purpose of the salon with the goals of the health promotion intervention. Health promotion programmers should establish coalitions and/or invite stylists and clients to serve on advisory boards to develop a shared set of priorities. Empowerment and civic engagement models can be utilized to foster a shared sense of ownership and an increased vested

interest in the success of health programming. These models can also support co-interventions designed to affect stylist health and subsequently the health of Black female clients. To enhance stylist-led health promotion and education, interventions would benefit from linking health issues to their impact on hair. In addition, establishing community-clinic partnerships between salons/stylists and healthcare professionals will increase legitimacy and promote utilization of healthcare services among clients. Health promotion in the Black hair salon must be community-centered and fluid. Black hair salons, much like Black women, are not homogenous and consideration for their diversity must be given.

CONTRIBUTIONS

The research for this dissertation was initiated by the doctoral candidate, Kelly N.B. Palmer. The candidate is responsible for the writing of the dissertation. Contributions to the research by others are presented below and have been appropriately acknowledged throughout the written dissertation.

Dissertation Committee

The dissertation committee, comprised of College of Public Health faculty, provided guidance and approval of the dissertation proposal. The committee reviewed, provided feedback, and approved each of the three manuscripts for publication in peer-reviewed journals.

- David O. Garcia, PhD, FACSM, Chair, Associate Professor, Department of Health Promotion Sciences.
- Jennifer Hathcer, PhD, MPH, RN, Minor Advisor, Professor, Division of Public Health Practice.
- David G. Marrero, PhD, Professor, Department of Health Promotion Sciences.
- Cynthia Thomson, PhD, RD, Professor, Department of Health Promotion Sciences.

Other Collaborators

Several other internal and external collaborators supported the ideation, conduct, and analysis of the research for this dissertation.

D. Jean McClelland, MLS	Joseph Ravenell, MD
Patrick S. Rivers, MPP	Nidal A-Z. Kram, MPH
Forest K. Melton, MS, MHA	Rochelle Leavell, MS
Abidemi Okechukwu, MBBS, MPH	Tava Suero
Namoonga Mantina, BS	Lashonda Taylor, MS

APPENDIX A. MANUSCRIPT 1

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RESEARCH ARTICLE Open Access

Health promotion interventions for African Americans delivered in U.S. barbershops and hair salons- a systematic review

Kelly N. B. Palmer[1*], Patrick S. Rivers[1], Forest L. Melton[1], D. Jean McClelland[2], Jennifer Hatcher[3], David G. Marrero[1], Cynthia A. Thomson[1] and David O. Garcia[1]

Abstract

Background: African American adults suffer disproportionately from obesity-related chronic diseases, particularly at younger ages. In order to close the gap in these health disparities, efforts to develop and test culturally appropriate interventions are critical.

Methods: A PRISMA-guided systematic review was conducted to identify and critically evaluate health promotion interventions for African Americans delivered in barbershops and hair salons. Subject headings and keywords used to search for synonyms of 'barbershops,' 'hair salons,' and 'African Americans' identified all relevant articles (from inception onwards) from six databases: Academic Search Ultimate, Cumulative Index of Nursing and Allied Health Literature (CINAHL), Embase, PsycINFO, PubMed, Web of Science (Science Citation Index and Social Sciences Citation Index). Experimental and quasi-experimental studies for adult (≥ 18 years) African Americans delivered in barbershops and hair salons that evaluated interventions focused on risk reduction/management of obesity-related chronic disease: cardiovascular disease, cancer, and type 2 diabetes were included. Analyses were conducted in 2020.

Results: Fourteen studies met criteria for inclusion. Ten studies hosted interventions in a barbershop setting while four took place in hair salons. There was substantial variability among interventions and outcomes with cancer the most commonly studied disease state ($n = 7$; 50%), followed by hypertension ($n = 5$; 35.7%). Most reported outcomes were focused on behavior change ($n = 10$) with only four studies reporting clinical outcomes.

Conclusions: Health promotion interventions delivered in barbershops/hair salons show promise for meeting cancer screening recommendations and managing hypertension in African Americans. More studies are needed that focus on diabetes and obesity and utilize the hair salon as a site for intervention delivery.

Trial registration: PROSPERO CRD42020159050.

Keywords: African Americans, Chronic diseases, obesity, Cancer, Cardiovascular disease, Type 2 diabetes mellitus, Health promotion, Barbershops, Hair salons, Systematic review

* Correspondence: kpalmer1@arizona.edu
[1]Department of Health Promotion Sciences, Mel and Enid Zuckerman College of Public Health, University of Arizona, 1295 N Martin Avenue, Tucson, AZ 85721-0202, USA
Full list of author information is available at the end of the article

Background

African Americans, the second largest minority group, account for 13.4% of the United States (U.S.) population [1]. African Americans are disproportionately burdened by obesity and related chronic diseases such as heart disease, cancer, and type 2 diabetes resulting in higher rates of morbidity and mortality than non-Hispanic whites (NHW) [2]. African Americans have the second highest prevalence for obesity and diabetes (46.8 and 12.7%, respectively) of any racial/ethnic group [3]. African Americans have two times the risk of having stroke or dying from cardiovascular disease, and have 50% more risk of having hypertension than NHW [4]. African Americans are at higher risk of developing colorectal cancer and their mortality rates for multiple myeloma and stomach cancer are double that of NHW [5]. Moreover, prostate cancer mortality risk is two times as high for African American men as compared to NHW men; while African American women have higher risk of death from breast and cervical cancers than NHW [5]. Many social determinants of health (wage gaps, substandard education and healthcare, and unethical housing policies) are associated with health disparities among African Americans [6, 7]. Historically, African Americans have had mistrust in the medical and research community making them less likely to see a primary care doctor and participate in health promotion research [8–11]. Strategies to engage African Americans in health promotion programs must consider cultural appropriateness when designing and implementing effective health promotion interventions.

By working with community partners that deliver services to African Americans and trusted health care providers that are members of the African American community, interventionists can identify socioeconomic risk factors and barriers to healthcare utilization, facilitate coordination of care and resources, and implement evidence-based interventions to address health disparities. Engaging African Americans in health promotion interventions has been challenging likely in part due to a lack of consideration of the role culture plays in components such as intervention attendance and adherence. Typically, interventions are located in settings that have been perceived historically as inaccessible or excluding to African Americans further exacerbating health inequities. Toward this end, public health practitioners have turned to trusted community-based settings as sites for health promotion education and programming.

Health behavior researchers and programmers have utilized faith-based organizations to reach the African American community [12, 13]. The church has historically served as a source of refuge where members and the African American community at large can gather for non-religious purposes such as socialization and civic and political activities. As an integral part of the communities in which they reside, the church is often tasked with community outreach initiatives as well as economic development opportunities for local residents. Researchers and programmers can benefit from including core African American cultural constructs such as religiosity and social support/structure offered by the church in their interventions [14]. Furthermore, leveraging the social network by engaging leaders in the church that can reinforce participation or model the desired healthy behavior can be advantageous [15]. Integrating biblical texts and spiritual elements into the intervention increases program effectiveness [14]. For all the progress in reaching the African American community, there are limitations with church-placed and church-based interventions. Young African American adults and African American men are less likely than older African Americans and African American women to attend church services regularly [16]. Also, black churches have found themselves inundated with projects and competing interests making it difficult to prioritize health promotion programs [17].

Akin to the church, barbershops and hair salons are staples in the African American community. They impart important African American cultural constructs such as communalism and expressiveness [18]. Sociocultural influences of behavior can be explored and leveraged through the barbershop and hair salon. Barbershops and hair salons serve as sources of entrepreneurship; therefore, owners, barbers, and stylists alike are respected by members of the African American community. Because they are highly accessible, barbershops and hair salons have been involved in health promotion activities such as formative research, subject recruitment, and delivery/implementation of interventions [18–25]. Because African American men have traditionally been a difficult group to engage, barbershop health promotion has increased in popularity [26]. Oftentimes, African American men hang out for hours at the barbershop beyond their service visit. During this time one can network for a job, buy or sell products, advertise a business, watch movies or sports, discuss or get advice on personal and family affairs, and participate in other recreation (play board/video games, card, dominoes, etc.) [26].

Like their male counterparts, African American women maintain a high-level of engagement with the hair salon for many of the same reasons. Due to the unique and close relationship African American women have with their stylist, researchers can find opportunity in delivering interventions in hair salons and to a further extent by hair stylists [27–32]. Hair stylists are trusted by their clients and therefore serve as a confidante, a reliable source of information, and oftentimes as a close

companion. This trust is in stark contrast to the mistrust of the medical system and research community common among African Americans. Because of this trust/mistrust, inaccessible quality healthcare, and lack of culturally appropriate interventions, African American woman are less likely to have a primary care provider [33]. However, it is more common for them to have a regular hair stylist illustrating the significance of routine hair care service [33]. Oftentimes hair care for African American women can require regular, lengthy visits to the salon thereby providing a captured audience suitable for health behavior interventions [34].

There is a paucity in the literature for systematic reviews that consider the role of the setting in engaging African Americans in health promotion. Among those, most have assessed cultural tailoring of evidence-based interventions (race concordance of interventionist, spirituality, etc.) [35–39]. A few have examined the role of churches, barbershops, and hair salons for recruitment of research participants into clinical trials [40, 41]. One synthesis of the literature explored barbershop and hair salon health promotion, but African Americans were not the primary population of interest [19]. Similarly, a 2015 qualitative systematic review described barber-led interventions targeted for African American men without inclusion of stylist-led interventions targeted for African American women [26]. This is the first systematic review of the effectiveness of barbershop and hair salon health promotion interventions for African Americans that elucidates the quality of evidence of these interventions. Characteristics of effective interventions addressing the leading obesity-related chronic disease (heart disease, cancer, and type 2 diabetes) health disparities for African Americans will be identified.

Methods

Literature search

This systematic review was conducted according to the guidelines set by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement [42]. The study was registered with the International Prospective Register of Systematic Reviews (PROSPERO) in 2020 (CRD42020159050). The detailed prespecified protocol has been previously published [43]. Seven databases (Academic Search Ultimate, Cumulative Index of Nursing and Allied Health Literature (CINAHL), Embase, PsychInfo, PubMed, Web of Science, and ProQuest Dissertations from inception to October 2019) were queried following comprehensive search strategies developed in consultation with a medical librarian (Additional file 1). Controlled vocabulary terms in databases (including MeSH and Emtree) and keywords were used in the search relevant to the target population (African Americans) and intervention component (delivery site-barbershops and/or hair salon) resulting in the following terms: “African American,” “Black American,” “African Ancestry,” “barber,” “barbering,” “beautician,” “beauty culture,” “cosmetologist,” “hair,” “hairdresser,” “hairstylist,” “stylist,” “beauty shop,” “beauty salon,” “hair salon,” and “salon.” The final search was conducted on October 08, 2019.

Inclusion criteria/study selection

Studies were included if they met the following inclusion criteria:

1) Adult African Americans were the target population for the intervention.
2) The intervention was delivered in a U.S. barbershop or hair salon.
3) The study evaluated an intervention aimed at reducing risk factors or improving health outcomes of obesity and/or related chronic conditions (i.e. cardiovascular disease, cancer, and type 2 diabetes).

Only interventional study designs were included. Studies were excluded if participants were children/adolescents (aged < 18 years), the intervention took place outside of the U.S., or if the article was published in a language other than English.

Identification of eligible articles

Figure 1 displays the screening and inclusion process depicted in a flow diagram. A search of the electronic databases yielded 1227 records by study author JM. After duplicates were removed, 973 records were uploaded to Covidence (Veritas Health Innovation, Melbourne Australia). Fifty-seven duplicates were removed, and 916 articles remained. Titles and abstracts were reviewed in triplicate by three of the study authors (KP, PR, and FM) resulting in 57 articles for full-text review. Study authors KP and PR independently reviewed the full text of each article against the inclusion/exclusion criteria. This resulted in 13 articles for inclusion in this review. One article reported on 2 studies, 2 articles are from the same study, but report different outcomes, and 2 articles are from the same study with one article reporting outcomes after extending the intervention [21, 29, 30, 44, 45].

Data extraction and quality assessment

Data extraction was completed in duplicate by study authors KP and PR using a customized Research Electronic Data Capture (REDCap) database (Additional file 2) [46]. Data reports were reviewed for accuracy by FM. Data variables extracted from each article included: first author’s last name, year of publication, article title, sample size, age range or mean age, gender, socioeconomic status of participants, geographic location, disease focus,

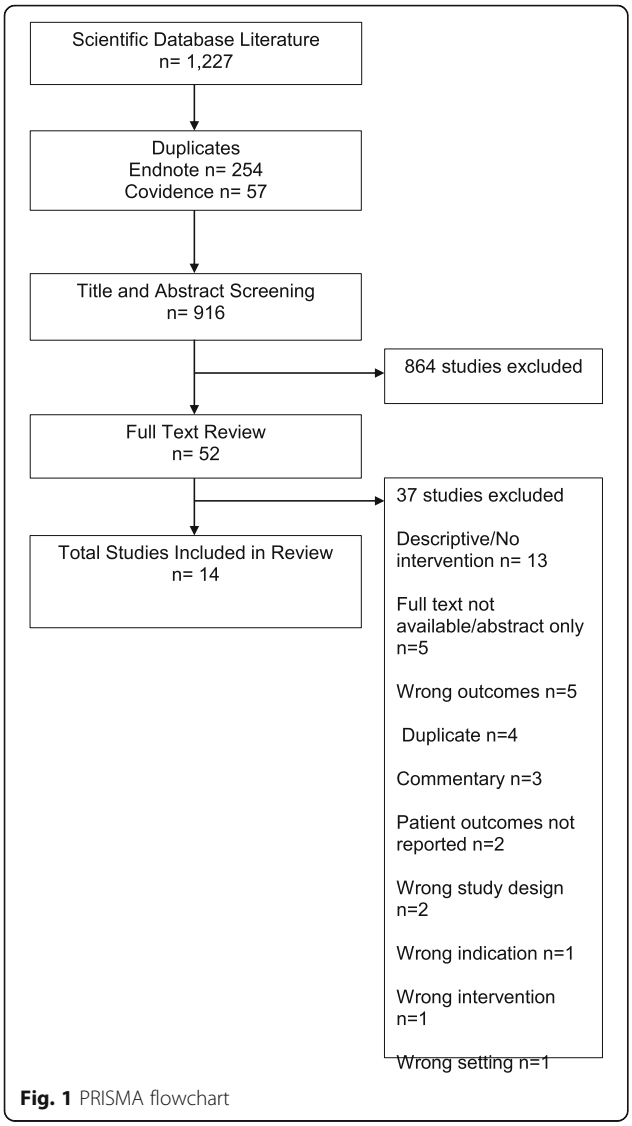

Fig. 1 PRISMA flowchart

study design, study setting, intervention/control description, intervention duration, follow up time points, if a community-based participatory research approach was employed, interventionist, if culturally-sensitive strategies were implemented, if incentives were given, theoretical frameworks/models, barbershop/hair salon recruitment strategies, and study outcomes and results (noting significance). For studies where the barber/stylist was the interventionist, data on intervention training and strategies for intervention fidelity were also collected. Due to the heterogeneity of studies and outcomes, data were analyzed and synthesized for presentation narratively and in tables in 2020. Two authors (KP and PR) independently evaluated the quality of evidence using the Effective Public Health Practice Project Quality Assessment Tool (EPHPP) to increase inter-rater reliability and reduce risk of bias [47, 48]. Articles were given a global rating by each of the two reviewers of weak, moderate, or strong based on the six component ratings of selection bias, study design, confounders, blinding, data collection, and withdrawals/dropouts. The two reviewers discussed global ratings for each article and a final decision of both reviewers was recorded in a REDCap database (Additional file 3).

Results

Study characteristics

Because one article reported outcomes for two studies [21], 14 studies are included in the final review. Characteristics of the 14 studies are presented in Table 1. Studies were published between 2007 and 2019. Seven studies were randomized control trials (RCTs) (six cluster RCTs and 1 RCT), four were pretest-posttest (three 2- group and one 1-group), two were nonrandomized feasibility studies, and one (1 group) posttest only study. Sample sizes varied widely from 20 to 1297 participants. Mean age of study participants ranged from 37 to 57.4 years, but ranges were wide with participants aged 18 to 88. Socioeconomic status (SES) was reported by all but two studies. Participants in three studies were reported as having only a high school education or less, low-income, and/or mostly uninsured [20, 54, 55]. Studies were mostly conducted in large urban/metropolitan cities with only one in a rural area [20]. Seven interventions focused on outcomes related to cancer [27, 29, 50–53, 55], five on cardiovascular disease (i.e. blood pressure) [21, 44, 45, 49], one on type 2 diabetes [30], and one on obesity [20]. Barbershops accounted for the majority of study settings ($n = 9$) [21, 44, 45, 50–53, 55, 56], with four studies taking place in hair salons [20, 27, 29, 30]. Interventions taking place in barbershops targeted men ($n = 9$) [21, 44, 45, 50–53, 55, 56] while those in hair salons targeted women ($n = 4$) [20, 27, 29, 30].

Interventions

Table 2 summarizes characteristics of the interventions. All studies evaluated barbershop/hair salon-based health promotion interventions aimed at reducing risk factors for or improving health outcomes of obesity-related chronic conditions in African Americans. Interventions were extremely heterogenous in mode of delivery, duration, and content. Most interventions were delivered in-person, two were delivered via media (video/DVD) [50, 52], and one was delivered via phone calls [55]. Barbers and stylists served as the interventionists in most cases. In two studies, when not serving as the primary interventionist, barbers and stylists supported client engagement with the interventionist, a medical professional/pharmacist [44, 45]. One study employed African American actors to portray barbers, barbershop clients, and doctors in a video-based intervention [52]. Two interventions were led by the researcher/research staff and

Table 1 Study Characteristics

First Author, Year, Ref	Title	Sample Size	Mean Age/ Age Range	SES	Geographic Location	Study Design	Disease State/Focus	Setting
Hess, 2007 [21]	Barbershops as Hypertension Detection, Referral, and Follow-Up Centers for Black Men	*n* = 94	40–60	mostly insured or have access to public health care system	Dallas, Texas	Non-Randomized Feasibility	Cardiovascular Disease	Barbershop
Hess, 2007 [21]	Barbershops as Hypertension Detection, Referral, and Follow-Up Centers for Black Men	*n* = 321	40–60	mostly insured or have access to public health care system	Dallas, Texas	Non-Randomized Feasibility	Cardiovascular Disease	Barbershop
Wilson, 2008 [27]	Hair Salon Stylists as Breast Cancer Prevention Lay Health Advisors for African American and Afro-Caribbean Women	*n* = 1185	38	Not reported	Brooklyn, New York	Cluster Randomized Control Trial	Cancer	Hair Salon
Holt, 2010 [49]	Cancer Awareness in Alternative Settings: Lessons Learned and Evaluation of the Barbershop Men's Health Project	*n* = 163	45+	Not reported	Birmingham, Alabama	2 group Pretest-Posttest	Cancer	Barbershop
Johnson, 2010 [20]	Beauty Salon Health Intervention Increases Fruit and Vegetable Consumption in African-American Women	*n* = 20	18–70	> 50% (11/20) High School Diploma	Rural South Carolina	2 group Pretest-Posttest	Obesity	Hair Salon
Luque, 2011 [50]	Barbershop communications on prostate cancer screening using barber health advisers	*n* = 40	53	mean education = 14 years, mean household income <$70 k, 78% privately insured	Tampa, Florida	1 group Posttest only	Cancer	Barbershop
Sadler, 2011 [29]	A Cluster Randomized Controlled Trial to Increase Breast Cancer Screening Among African American Women: The Black Cosmetologists Promoting Health Program	*n* = 984	40.6 20–88	mostly college educated (52% some college, 34% complete college)	San Diego, California	Cluster Randomized Control Trial	Cancer	Hair Salon
Victor, 2011 [27]	Effectiveness of a Barber-Based Intervention for Improving Hypertension Control in Black Men	*n* = 1297	Intervention: 49.5 Control: 51.2	85% middle income and insured	Dallas, Texas	Cluster Randomized Control Trial	Cardiovascular Disease	Barbershop
Odedina, 2014 [51]	Development and assessment of an evidence-based prostate cancer intervention programme for black men: the W.O.R.D. on prostate cancer video	*n* = 142	50–59	> 50%: <$20 k, H.S. diploma, had insurance, had PCP	Florida	1 group Pretest-Posttest	Cancer	Barbershop
Sadler, 2014 [30]	Lessons learned from The Black Cosmetologists Promoting Health Program: A randomized controlled trial testing a diabetes education program	*n* = 984	40.6 20–88	mostly college educated (52% some college, 34% complete college)	San Diego, California	Cluster Randomized Control Trial	Type 2 Diabetes	Hair Salon
Frencher, 2016 [52]	PEP Talk: Prostate Education Program, Cutting Through the Uncertainty of Prostate Cancer for Black Men Using Decision Support Instruments in Barbershops	*n* = 120	40+	majority income<$24 k; uninsured, college or more	South Los Angeles, California	2 group Pretest-Posttest	Cancer	Barbershop
Cole, 2017 [53]	Community-Based, Preclinical Patient Navigation for Colorectal Cancer Screening Among Older Black Men Recruited From Barbershops: The MISTER B Trial	*n* = 731	57.4 50+	mean annual income = $16,726, 1/3 < High School diploma, ~ 50% unemployed	New York, New York	Randomized Control Trial	Cancer	Barbershop
Victor,	A Cluster-Randomized Trial of	*n* = 319	Intervention:	mostly college	Los Angeles,	Cluster	Cardiovascular	Barbershop

Table 1 Study Characteristics *(Continued)*

First Author, Year, Ref	Title	Sample Size	Mean Age/ Age Range	SES	Geographic Location	Study Design	Disease State/Focus	Setting
2018 [45]	Blood- Pressure Reduction in Black Barbershops		54.4 Control: 54.6 35–79	educated, have regular medical provider and insured	California	Randomized Control Trial	Disease	
Victor, 2019 [46]	Sustainability of Blood Pressure Reduction in Black Barbershops	$n = 319$	I: 54.4 C: 54.6 35–79	mostly college educated, have regular medical provider and insured	Los Angeles, California	Cluster Randomized Control Trial	Cardiovascular Disease	Barbershop

one by trained counselors and community health workers [21, 50, 55]. Intervention duration varied from 25 min (video) to 14 months. The use of Social Cognitive Theory (SCT) was reported in three studies [21, 27]; two studies cited Health Belief Model [29, 30]; one study employed the Personal Integrative Model of Prostate Cancer and the Health Communication Process model [52], one study utilized peer learning [44], and one study adapted a model from the AIDS Community Demonstration Project [56]. Only five studies explicitly stated using a community-based participatory research (CBPR) approach [27, 29, 50, 51, 53].

Barbershop/hair salon recruitment strategies were described for most of the studies. Five of the studies employed community agencies or existing community partnerships to recruit sites [29, 30, 50, 51, 53]. Three studies targeted certain geographical areas [27, 55, 56]. For two studies, hair stylists were assessed for fit with the mission of the project [20, 30]. And one study reported specific criteria for selection of barbershops [56]. Aside from using the barbershop or hair salon as the primary site for interventions, other culturally adapted strategies used were tailoring materials (print/media) for African Americans and in some cases specifically by gender. Materials were either developed or tested by the target audience prior to use in the studies. Other tactics were ensuring interventionists and/or data collectors were African American. One study incorporated ancestral storytelling, a traditional African communication model, as a mechanism for the hair stylists to deliver the intervention message to their clients and subsequently to their clients' family and friends [30]. The majority of studies provided incentives to barbers/stylists and/or customers. Intervention content focused on the following topics: cancer (screening, prevention, treatment, medical provider engagement, access, risk factors, general knowledge), cardiovascular disease (blood pressure (BP)/hypertension (HTN) treatment, medical provider engagement, access), diabetes (screening, medical provider engagement, access, risk factors, general knowledge), obesity (physical activity, diet, water consumption), skill building, and self-efficacy to engage in the intended health behavior.

For interventions delivered by barbers or hair stylists ($n = 8$), details about intervention training and fidelity strategies are provided in Table 3. Trainings were in-person and facilitated by the researcher/research staff and when appropriate medical or content professionals. Written materials (handbooks, brochures, scripts, etc.) were used to supplement trainings as well as ongoing/refresher trainings. Intervention fidelity strategies included on-site monitoring by research staff or a community research partner, regular quality assurance review of the data being collected, and researcher accessibility to the barbers/stylists for continued support. One study did not monitor fidelity throughout the intervention, but did post-study surveys and interviews with study participants to evaluate barber intervention delivery [56].

Outcomes

Primary, secondary, and feasibility outcomes data are presented in Table 4. There was significant heterogeneity in outcomes with most primary outcomes being behavioral and four studies reporting clinical outcomes related to BP/ HTN [21, 44, 45, 56]. Behavioral outcomes included clinic-based screening (completion/intent), home-based screening (self-exam), provider follow up (treatment, general conversation), physical activity (quantity), and diet (servings of fruit/vegetables and water consumption). Six studies reported significant between-group differences [20, 21, 44, 45, 55, 56] while two reported significant with-in group differences [52, 53]. All studies that reported changes in HTN treatment had significant findings. Two articles where each intervention served as the comparison for the other, reported significant outcomes related to cancer screening for both groups, but non-significant results for the diabetes screening (between-group and intervention). The interventions were identical in every aspect except content (specific to disease state) [29, 30].

Feasibility outcomes included as an exploratory focus for this review were not always explicitly stated, but

Table 2 Intervention Characteristics

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
Hess, 2007 [21]	Barbershop	Staff delivered intervention- Physician referral for follow up with BP report card for ongoing feedback Role model stories depicting successful risk reduction strategies adopted by hypertensive African American men	Both groups received written results of the 3 BP screenings and standard recommendations for interval medical follow-up	Researcher/ Research Staff	8 months/ Baseline and post-intervention	Social Cognitive Theory	Not reported	Not reported	Intervention delivered by African American research assistants and medical/ premedical students supervised by an African American nurse	Barbers Customers
Hess, 2007 [21]	Barbershop	Barbers delivered the intervention- Blood Pressure report cards to be signed by provider and returned to barber	American Heart Association brochures titled High BP in African Americans	Barbers	14 months/ Post-intervention	Social Cognitive Theory	Not reported	Not reported	Not reported	Barbers Customers
Wilson, 2008 [27]	Hair Salon	Intervention designed to promote stylist's skills and motivation to provide correct and consistent breast health info to female clients on an ongoing basis. Breast health recommendations included monthly breast self-exams, annual clinical breast exams, and routine mammography for women 40 + . Stylists to promote client skills, self-efficacy, and motivation for engaging in breast health behaviors Written materials for clients on where to get services for breast cancer detection and treatment	No-treatment control	Hair Stylists	3 months/ Baseline and 1–3 post-intervention	Social Cognitive Theory	Yes	List of salons from targeted neighborhoods generated via phone book listings and internet by zip codes. Randomly selected salons and contacted owners to assess willingness to participate in study.	No description	Hair Stylists
Holt, 2010 [51]	Barbershop	Health messages about CaP and CRC delivered by barbers to clients. Barbers help with strategies for informed decision making about screening supported by posters, print materials, and videos	Not reported	Barbers	3 months/ Baseline and post-intervention	Not reported	Yes	Barbershops recruited and trained by the community partnership	Community advisory panel developed intervention and recruited barbers	Customers

Table 2 Intervention Characteristics *(Continued)*

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
Johnson, 2010 [20]	Hair Salon	3 scripted motivational sessions during clients' service appointments encouraging them to adopt healthy behaviors- 1) Role modeling 2) Motivation 3) Check-in and recognition Information packets- 4 pages of info on fruit/ vegetable consumption, PA, and water consumption reviewed by dieticians Starter kits- Samples of fruits/vegetables and a bottle of water given at sessions 1 and 3	No treatment control at second salon	Hair Stylists	6 weeks/ Post-intervention	Not reported	Not reported	Stylists were screened to assess value of evidence-based health and any changes to the stylist's personal health in the last 12 months.	Broad overall health changes instead of specific numerical goals with focus on efficacy. Materials reviewed by African American women before study	Not reported
Luque, 2011 [53]	Barbershop	CaP education materials developed by research team (brochure/poster, video, and Flipchart) tailored for African American men adapted from early detection/ screening to informed decision-making for PCS guidelines. Plastic prostate model, barber talking points card, and community resources list	Not applicable	Barbers	one session during client visit to barbershop/ post-intervention	Not reported	Yes	Community health agency helped identify 2 barbershops. Snowball strategy from initial 2 barbershops resulting in 2 more barbershops. Clients- convenience sample of barbershops	Education materials tailored for African American men via learner verification and then piloted with African American men.	Not reported
Sadler, 2011 [29]	Hair Salon	Cosmetologists were to engage clients in conversation about adhering to BC screening guidelines for them, family, and friends, and importance of early detection (CBE and mammography) and treatment. A series of eight laminated "Mirror Challenges" were sequentially posted in a corner of the	Diabetes education intervention identical to BC intervention in all ways but content	Hair Stylists	6 months/ baseline and 6 months	Health Belief Model	Yes	African American church members helped recruit cosmetologists and facilitate meeting with study leader. Clients recruited via African American research assistant or stylists.	Ancestral storytelling	Hair Stylists Customers

Table 2 Intervention Characteristics *(Continued)*

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
		cosmetologists' mirror. Relevant articles from lay newspapers and magazines trusted by the African American community were laminated and given to cosmetologists. A 3-ring binder of info was used as well. A soft plastic BC model to show how a BC lump felt and string of clay beads to depict various sizes of BC lumps given. BC posters with images of African American women throughout salon.								
Victor, 2011 [49, 56]	Barbershop	Barbers offered repeated BP checks during haircuts, gave repeated personalized sex-specific health messages to promote physician follow up Posters with barbershop patrons modeling HTN treatment behaviors and testimonials Patrons with elevated BP recommended to follow up with a physician (or study nurse) Patrons with elevated BP received referral cards to give physicians for feedback and to document patron-physician interaction	Standard HTN education pamphlets from the AHA written for a broad audience of black men and women	Barbers	10 months/ Baseline and 10 months	Adapted from the AIDS Community Demonstration Projects that mobilized community peers to deliver intervention messages (specific action items) with role model stories and made medical equipment available in the daily environment	Not-reported	Barbershops selected to represent 4 geographic areas > 95% black male clientele > 10 years in business > 3 barbers	Not-reported	Barbers Customers
Odedina, 2014 [52]	Barbershop	A prostate cancer education video "Working through Outreach to Reduce Disparity (W.O.R.D.) on Prostate Cancer" Focuses on explaining the risk factors for CaP, how to reduce the risk for CaP, and informed decision	Not applicable	African American actors portraying barbers, clients, ministers, and doctors	25 min/ Baseline and post-intervention	Personal Integrative Model of Prostate Cancer Disparity (PIPCaD) model Health Communication Process Model	Not reported	Not applicable	Using African American actors to model desired behaviors for target population (African American men) Video setting in a barbershop	Customers

Table 2 Intervention Characteristics *(Continued)*

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
		making about CaP screening. Barbershop conversation teaches main character importance of CaP prevention (CaP survivor shares his story). As a result, he decides to follow up with doctor.								
Sadler, 2014 [30]	Hair Salon	Diabetes education intervention to increase diabetes knowledge, change diabetes attitudes, and increase diabetes screening behaviors among African American women. Article references Sadler 2011 with details of BC intervention that is comparable to diabetes intervention with only difference being content.	BC education intervention identical to diabetes intervention in all ways but content	Hair Stylists	6 months/ baseline and 6 months	Health Belief Model	Not reported	African American church members helped recruit cosmetologists and facilitate meeting with study leader. Clients recruited via African American research assistant or stylists.	Ancestral storytelling	Hair stylists
Frencher, 2016 [50]	Barbershop	2 Decision Support Instruments in DVD format: VCU- culturally tailored to African American men FIMDM- general audience Both present treatment options for CaP	DSI DVD designed for general audience	Researcher/ Research Staff	One-time intervention, 30 min/ 3 months post-intervention	Not reported	Yes	Recruited from Black Barbershop Health Outreach Program (BBHOP) and other non-BBHOP barbershops. Recruitment was scripted and letters of support and consent for research were obtained from owners.	VCU's DSI DVD tailored to African American men using focus group data from African American men to develop the decision tool. The cast in the video are mostly African American	Barbers Customers
Cole, 2017 [55]	Barbershop	3 arms (PN, MINT, PLUS); cross randomized PN: Patient navigation for CRC screening. 2+ phone calls: 1) education 2) screening readiness assessment & barriers. PN encourage colonoscopy appt. Within 2 weeks. Or	MINT: motivational interviewing and goal setting, 4 sessions PLUS: PN + MINT All: Printed education materials from American Cancer	CHWs/Trained Counselors	6 months/ 2 weeks and 6 months	Not reported	Not reported	Barbershops were identified by study staff from densely populated African American neighborhoods. Participants (customers and local residents)	Not reported	Not reported

Table 2 Intervention Characteristics *(Continued)*

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
		FIT if preferred.	Society and NHLBI					recruited during screening event at barbershop.		
Victor, 2018 [44]	Barbershop	Barbers measured BP and encouraged follow up with pharmacist Pharmacists met regularly with participants in barbershops, prescribed meds, measured BP, encouraged lifestyle changes, and monitored plasma electrolyte levels Pharmacists followed up with participants' physician (via progress notes) Pharmacists interviewed participants to generate peer-experience stories (posted on shop walls), reviewed blood-pressure trends, and gave participants $25 per pharmacist visit to offset the costs of generic drugs and transportation to pharmacies. 2 BP screening results with follow up recommendations and identification cards, follow up calls at 3mos, culturally specific health sessions, and vouchers for haircuts	Active control approach (in which barbers encouraged lifestyle modification and doctor appointment)	Medical Professionals-Pharmacists	6 months/ Baseline and 6 months	Peer learning	Not reported	Not reported	No description	Customers
Victor, 2019 [45]	Barbershop	Barbers measured BP and encouraged follow up with pharmacist Pharmacists met regularly with participants in barbershops, prescribed meds, measured BP, encouraged lifestyle changes, and monitored plasma electrolyte levels Pharmacists followed up with participants' physician (via progress notes)	Instruction about BP and lifestyle modification	Medical professionals-Pharmacists	12 months/ baseline, 6 months, and 12 months	Not reported	Not reported	Not reported	No description	Customers

Table 2 Intervention Characteristics *(Continued)*

Author, Year	Setting	Intervention	Comparison	Interventionist	Duration/ Data Collection Time Points	Theoretical Framework/ Model	CBPR Approach	Recruitment Strategies	Culturally Adapted Strategies	Incentives
		Pharmacists interviewed participants to generate peer-experience stories (posted on shop walls), reviewed BP trends, and gave participants $25 per pharmacist visit to offset the costs of generic drugs and transportation to pharmacies. 2 BP screening results with follow up recommendations and identification cards, follow up calls at 3mos and 9mos, culturally specific health sessions, and vouchers for haircuts								

BP Blood Pressure, *CaP* Prostate Cancer, *CRC* Colorectal Cancer, *PA* Physical Activity, *PCS* Prostate Cancer Screening, *BC* Breast Cancer, *CBE* Clinical Breast Examination, *AHA* American Heart Association, *HTN* Hypertension, *VCU* Virginia Commonwealth University, *DSI* Decision Support Instrument, *FIMDM* Informed Medical Decisions Foundation, *CHW* Community Health Worker

Table 3 Barber/Stylist Led Interventions

Author, Year	Interventionist/ Setting	Intervention Training	Intervention Fidelity Strategies
Hess, 2007 [21]	Barbers/ Barbershop	Not reported	Research staff regularly checked the validity of the encounter form data against data stored in the electronic monitors and intermittently observed customer flow to validate the barbers' counts of adult and child business.
Wilson, 2008 [27]	Hair Stylists/Hair Salon	Stylists were trained to conduct tailored and culturally sensitive counseling that would encourage clients to engage in breast health behaviors 2, two-hour workshops, a reference handbook, and on-going support and technical assistance by research staff. Stylist training was implemented in waves, based on planned initiation of intervention activities in that salon	Program staff made frequent visits to salons to support stylists in their promotion of message delivery throughout the time during which the program was administered.
Holt, 2010 [49]	Barbers/ Barbershop	Barbers trained by community advisory panel. One day of training education training modules and barbers given strategies for helping their clients make informed decisions about screening	Did not collect/not report.
Johnson, 2010 [20]	Hair Stylists/Hair Salon	Stylists were trained by research team. Motivational sessions using a script as a guide with practice and feedback from research team member.	Weekly check-ins.
Luque, 2011 [50]	Barbers/ Barbershop	10 contact hours of training (didactic, interactive group, and team building) on administering materials by research team, health agency partners, and local urologist at agency's facilities and in barbershops.	Health agency partner monitored barbers via shop visits, attended project meetings, and facilitated focus group work with barbers for post-intervention evaluation.
Sadler, 2011 [29]	Hair Stylists/Hair Salon	Cosmetologists received ~ 4 h of 1-on-1 training with the Principal Investigator and an additional 4 h of reading materials that reviewed and summarized the Principal Investigator's training. The reading materials resources: National Cancer Institute, American Cancer Society, and Susan G. Komen-for-the-Cure Foundation. Cosmetologists also received individual training from an African American ancestral storyteller to enhance their ability to pass along their health promotion messages orally. Every two weeks, the cosmetologists were given hands-on training materials and shown ways the materials could be used to facilitate discussions with their clients to keep the screening message updated with fresh information	Principal Investigator made unannounced visits to salons every 2 weeks during the first 3 months and then monthly thereafter to restock and bring new materials (for consistency), offer training, and answer questions. Principal Investigator was accessible to cosmetologists at all times.
Victor, 2011 [27]	Barbers/ Barbershop	Not reported	Participant follow up survey and interview data on intervention delivery by barbers.
Sadler, 2014 [30]	Hair Stylists/Hair Salon	IRB consent training. Stylists received 1-on-1 training with the Principal Investigator and reading materials. Stylists also received individual training from an African American ancestral storyteller to enhance their ability to pass along their health promotion messages orally. The stylists were given ongoing training from the Principal Investigator and participated in biannual luncheon trainings. Screening message updated with fresh information.	Principal Investigator and research team made unannounced visits to salons. Principal Investigator was accessible via cell phone to stylists at all times.

assessed the following areas: acceptability (satisfaction, intent to continue use), practicality (quality of implementation, effects on target audience, ability to carry out, cost analysis), integration, limited efficacy (effect size, intended effects on intermediate variables), and implementation (degree of execution, success or failure of execution). Implementation was the most assessed ($n = 7$) followed by acceptability ($n = 5$), practicality ($n = 3$), and limited efficacy (n = 3). Overall, studies reported favorable feasibility outcomes noting barbers/stylists' ability to deliver, barber/stylists' degree of executing the interventions, and clients' satisfaction with interventions. In one study, 98% of participants and all of the barbers expressed a desire to continue with the intervention [56]. One study performed a cost-analysis for a barber delivered hypertension intervention. In the cost-effectiveness model, the intervention was cost-neutral with the intervention costing ~$50 per barbershop patron [56].

Table 4 Outcomes

Author, Year	Setting	Primary Outcomes	Primary Results	Secondary Outcomes	Secondary Results (Significant)	Feasibility Outcomes	Feasibility Results
Hess, 2007 [21]	Barbershop	Change in BP Changes in HTN Treatment rate (percentage of hypertensive subjects receiving prescription BP medication) HTN control rate	I: BP fell 16 +/− 3/9 +/− 2 mmHg (systolic: 149.1 +/− 2.2 to 133.4 +/− 2.2 mmHg; diastolic: 87.4 +/− 2.6to 78.82.6 mmHg) C: Unchanged (systolic: 146.4 +/− 2.4 to 146.7 +/− 2.4 mmHg; diastolic: 87.9 +/− 2.2 to 88.0 +/− 2.2 mmHg) Intervention effectremained significant ($P < 0.0001$) after adjustment for age and body mass index I: HTN treatment increased from 47 to 92% ($P < 0.001$) C: Unchanged I: HTN control increased from 19 to 58% (P < 0.001) C: Unchanged			Implementation	high percentage of haircuts accompanied by a BP recording, as well as BP readings interpreted correctly.
Hess, 2007 [21]	Barbershop	Proportion of haircuts in which the barber recorded a BP	81% haircuts barber recorded a BP	HTN control rate	HTN control rate increased progressively with increasing levels of intervention exposure: 20+/− 10.7% to 51+/− 9% ($p = 0.01$) Association between intervention exposure and HTN control remained significant after controlling for insurance status (p = 0.01)	Implementation	high percentage of haircuts accompanied by a BP recording BP readings interpreted correctly. Barbers correctly staged 92% of BPs
Wilson, 2008 [27]	Hair Salon	Self-breast exam (BSE) completion Clinical breast exam (CBE) completion CBE intention (12 months) Mammogram completion Mammogram intention (12 months)	BSE completion: AOR 1.60 (95% CI: 1.2–2.13) CBE completion: AOR 1.20 (95% CI: 0.94–1.52) CBE intention: AOR 1.87 (95% CI: 1.11–3.13) Mammogram completion: AOR 1.21 (95% CI: 0.84–1.76) Mammogram intention: AOR 1.34 (95% CI: 0.9–1.2)			Implementation-degree of execution	37% intervention vs. 10% control reported exposure to breast health messages
Holt, 2010 [51]	Barbershop	CaP screening/ intent to screen (PSA/DRE) CRC screening/ intent to screen (FOBT/FS/CS)	Possible increases in self-reported PSA test and prep for PSA and DRE. I: constantly greater increase in awareness, screening, and prep for FS	CaP knowledge CRC knowledge CRC screening perceived barriers and benefits	Results not significant	Not reported	Not reported
Johnson, 2010 [20]	Hair Salon	Increase in fruit and vegetable	Fruit and vegetable intake increased from			Not reported	Not reported

Table 4 Outcomes *(Continued)*

Author, Year	Setting	Primary Outcomes	Primary Results	Secondary Outcomes	Secondary Results (Significant)	Feasibility Outcomes	Feasibility Results
		consumption Increase in physical activity Increase in water consumption	pre-posttest for the treatment group No increase in physical activity No increase in water consumption				
Luque, 2011 [53]	Barbershop	Likelihood of discussing CaP with healthcare provider (4-point Likert scale (very unlikely to very likely)) CaP knowledge (5 pt. Likert scale (low to high))	Somewhat likely to very likely Increased from 75 to 85% $p < .001$ 78% reported increase in knowledge	Feelings of worry about CaP (4 pt. Likert not worried to very worried) Projected PCS modality intention (PSA, DRE, or both)	Somewhat worried to very worried increased from 35 to 45%. $p < .001$ 85%- Both (PSA & DRE)	Satisfaction with the intervention Intention to continue the intervention Expansion and implementation	Participants reported that the materials were easy to understand, had an attractive color scheme, and featured familiar faces printed on the materials. All barbershop clients surveyed reported positively on the contents of the brochure and poster 53% had discussed CaP at least two times with their barber in the last month
Sadler, 2011 [29]	Hair Salon	Adherence to Mammography screening guidelines	ITT between groups at follow up not significant ITT for mammography completers in both groups significantly ($p < .05$) higher at follow up. Adjusting for age (40+) as covariate yielded adherence to screening OR 2.0 (95% CI: 1.03–3.85) times higher for I vs C	Clinical breast exam adherence Participants' awareness and perceptions of their vulnerability for breast cancer	ITT for perception of seriousness of BC as health threat reduced significantly ($p < .05$) in both groups, but greater reduction in diabetes arm. OR of listing BC as threat 1.8 times higher in BC arm (95% CI: 1.0–3.1).	Practicality Implementation-degree of execution	57% of the women reported that health education materials were displayed in their salon 57% participants reported that the cosmetologists in their salon were offering health information to their clients 80% of the women felt cosmetologists could effectively carry out intervention
Victor, 2011 [49, 56]	Barbershop	Change in HTN control rates (BP measurements and prescription labels) Patron-physician follow up interaction (signed referral card)	Greater HTN control in I vs C Intervention effect: Absolute group difference- 8.8% (95% CI: 0.8–16.9; Unadjusted: $p = .04$ Adjusted $p = .03$) Intervention effect: ITT- 7.8% (95% CI: 0.4–15.3; $p = .04$)	Barbershop-level changes in HTN treatment rates HTN awareness BP levels	Results not significant	Satisfaction with the intervention Intention to continue the intervention Practicality Implementation and Penetration	83% patrons heard a model story during every one or half their haircuts from barber 77% patrons received BP measurement from barber 51% patrons with elevated BP received counseling/physician referral from barber 98% patrons and all 29 barbers would like the intervention to continue Cost analysis- Cost effectiveness- cost-neutral for health care system would be $50/patron
Odedina, 2014 [52]	Barbershop	CaP screening CaP knowledge Decisional conflict	CaP Screening intention: 12.78 (2.48) to 13.37 (2.13) $p = .0001$ CaP knowledge: 63.60 (22.20) to 74.00 (16.80) $p = 0.0021$	Intervention effects	Completion of PN Intervention was significantly associated with study completion and CRC screening	Satisfaction with the intervention Limited Efficacy	> 90% of the participants indicated that they were satisfied with the video The mean satisfaction rating was 13.6 on a

Table 4 Outcomes *(Continued)*

Author, Year	Setting	Primary Outcomes	Primary Results	Secondary Outcomes	Secondary Results (Significant)	Feasibility Outcomes	Feasibility Results
							scale ranging from 3 to 15, indicating a highly satisfactory rating for the video > 75% of the participants indicated that the video: 1) was useful, 2) was understood, 3) not embarrassing, 4) was not too long, 5) not difficult, 6) was relevant, 7) got their attention, 8) has potential to increase CaP knowledge for African American men, and 9) was credible
Sadler, 2014 [30]	Hair Salon	Self-reported diabetes screening test in the past year, annual physical exam, and annual eye exam	There were no significant differences in rates of diabetes screening, routine annual screening, and eye exams from baseline to follow-up and between the two arms at follow-up	Knowledge and attitudes about diabetes	Both groups increased significantly from baseline in their overall diabetes knowledge: diabetes arm (M = 4.47; SD = 1.67) and breast cancer arm (M = 4.61; SD = 1.54), $P < 0.05$	Practicality Limited Efficacy Implementation-degree of execution	75% reported attending salon where health education was being offered. 65% reported cosmetologist made health info available 41% shared info w with family and friends 92% feel cosmetologist could effectively deliver diabetes information
Frencher, 2016 [50]	Barbershop	CaP screening via PSA test	*n* = 58 completed PSA testing (48%)	CaP knowledge and intention	Changes in knowledge and intention- all significant Intention to screen- increased from 57 to 73% Overall- no between group differences	Not reported	Not reported
Cole, 2017 [55]	Barbershop	CRC screening completion (self-report)	ITT; Mixed-effects regression analysis PN: 17.5% completion; MINT: 8.4%; PLUS: 17.8% PN: AOR = 2.28; 95% CI = 1.38, 4.34; PLUS: AOR = 2.44; 95% CI = 1.38, 4.34 2xs more likely for CRC screening completion (PN and PLUS) intraclass correlation coefficient = 0.039			Not reported	Not reported
Victor, 2018 [44]	Barbershop	Changes/ reduction in systolic blood pressure	I: 27.0 mmHg reduction in SBP C: 9.3 mmHg Mean reduction in SBP 21.6 mmHg > for I than C (95% CI: 14.7, 28.4); p < .001 ITT Intervention effect: 21.0 mmHg > for I	Changes in DBP Rates of meeting BP goals Numbers of hypertensive meds Adverse drug	Mean reduction in DBP 14.9 mmHg > in I vs C (95% CI, 10.3 to 19.6; P < 0.001) I: higher % of meeting BP goals I: Increases in use of antihypertensive meds: 55–100%;	Limited Efficacy Implementation-degree of execution	7 in-person pharmacist visits and 4 follow up calls per participant 6 calls/messages to pharmacist per participant 4 BP Checks per participant

Table 4 Outcomes *(Continued)*

Author, Year	Setting	Primary Outcomes	Primary Results	Secondary Outcomes	Secondary Results (Significant)	Feasibility Outcomes	Feasibility Results
			than C (95% CI: 14.0, 28.0); $p < .001$	reactions Self-rated health Patient engagement	C: 53–63% ($p < .001$)		by barber 4 health lessons per participant by barber
Victor, 2019 [45]	Barbershop	Change in SBP	I: mean reduction = 28.6 mmHg C: mean reduction = 7.2 mmHg Mean SBP reduction 20.8 mmHg > I vs C (95% CI: 13.9, 27.7; $p < 0.0001$) ITT intervention effect: 20.6 mmHg reduction (95% CI: 13.8, 27.3; $p < 0.0001$)	Changes in DBP Rates of meeting BP goals Numbers of hypertensive meds Adverse drug reactions Self-rated health Patient engagement	Mean DBP reduction 14.5 mmHg > I vs C (95% CI, 9.5–19.5 mmHg; $P < 0.0001$) I: higher % of meeting BP goals (68% vs 11%; $p = 0.0177$) I: Increase in use of antihypertensive meds: 57 to 100% C: 53 to 65% No treatment-related adverse events/deaths I: Greater increase in self-rated health and patient engagement scores	Limited Efficacy Implementation-degree of execution	11 in-person pharmacist visits (0-6 months = 4;7-12 months = 4) 4 BP checks per participant by barber 4 health lessons per participant by barber

BP Blood Pressure, *SBP* Systolic Blood Pressure, *DBP* Diastolic Blood Pressure, *I* Intervention, *C* Control, *CaP* Prostate Cancer, *CRC* Colorectal Cancer, *PA* Physical Activity, *PCS* Prostate Cancer Screening, *PSA* Prostate Specific Antigen, *DRE* Digital Rectal Examination, *FOBT* Fecal Occult Blood Test, *FS* Flexible Sigmoidoscopy, *CS* Colonoscopy, *BC* Breast Cancer, *CBE* Clinical Breast Examination, *BSE* Breast Self-Examination, *HTN* Hypertension, *ITT* Intention to Treat

Quality of evidence

Global evidence quality ratings for each study appear in Table 5. Guided by the EPHPP evaluation process, studies were rated on the following six components: selection bias, study design, confounders, blinding, data collection methods, and withdrawals/dropouts. The global rating for each study was determined based on the total number of component "weak" ratings. One study was rated as "strong," [56] two rated as "moderate," [44, 45] and eleven rated as "weak." [20, 21, 27, 29, 30, 50–53, 55] Many of the studies that had a global rating of "weak" had non-RCT study designs resulting in a "moderate" or "weak" study design rating and components that did not apply/could not be rated accordingly. Because most participants were self-referred, many studies rated "weak" on selection bias. Oftentimes, studies did not report on blinding or on validation/reliability of data collection instruments and therefore received component ratings of "weak." Most studies controlled for

Table 5 Quality of Evidence

Author, Year	Study Design	EPHPP Global Quality Assessment Rating
Hess, 2007 [21]	Non-Randomized Feasibility	Weak
Hess, 2007 [21]	Non-Randomized Feasibility	Weak
Wilson, 2008 [27]	Cluster Randomized Control Trial	Weak
Holt, 2010 [51]	2 group Pretest-Posttest	Weak
Johnson, 2010 [20]	2 group Pretest-Posttest	Weak
Luque, 2011 [53]	1 group Posttest only	Weak
Sadler, 2011 [29]	Cluster Randomized Control Trial	Weak
Victor, 2011 [49, 56]	Cluster Randomized Control Trial	Strong
Odedina, 2014 [52]	1 group Pretest-Posttest	Weak
Sadler, 2014 [30]	Cluster Randomized Control Trial	Weak
Frencher, 2016 [50]	2 group Pretest-Posttest	Weak
Cole, 2017 [55]	Randomized Control Trial	Weak
Victor, 2018 [44]	Cluster Randomized Control Trial	Moderate
Victor, 2019 [45]	Cluster Randomized Control Trial	Moderate

confounders during analysis yielding "strong" component ratings.

Discussion

With the disproportionate rates of obesity-related chronic diseases in the African American community, there is an imperative need to better elucidate strategies for engagement in health promotion interventions. Due to historically unethical medical and research practices in the U.S., African Americans have a longstanding history of mistrust of the medical and research community resulting in low participation and engagement, furthering the gap in health [8, 57, 58]. To remedy this, the use of culturally "safe" spaces such as churches, barbershops, and hair salons for recruitment and engagement of African Americans into research studies and lifestyle/behavioral interventions have become increasingly popular [59–61]. To this end, designing interventions to be delivered in trusted, culturally significant settings are advantageous. Barbershops and hair salons are highly accessed, cultural staples in the African American community perfectly situated to tackle the health disparities that plague this community.

This is the first review to synthesize the effectiveness and feasibility of obesity-related chronic disease interventions targeted for African Americans delivered in barbershops and hair salons. Eight of the fourteen studies included in this review reported significant results for clinical and/or behavioral outcomes suggesting that interventions delivered in barbershops and hair salons may be effective for reducing risk factors for or improving health outcomes of obesity-related chronic conditions in African Americans. Of these studies, half used an RCT design, the most rigorous methodology for establishing effectiveness. However, only one of these studies received a "strong" global quality assessment rating, while two received a rating of "moderate" and one received a rating of "weak" due to deficiencies in blinding and selection bias, data collection methods and reporting of withdrawals/dropouts, respectively. This coupled with the variability of duration for interventions point to the need for more efficacious research with considerations for the nuances of community-based study designs.

Among the research with significant results, the outcomes are split evenly between clinical and behavioral. Clinical interventions focused on changes in blood pressure and HTN management while behavioral interventions that can support clinical outcomes included cancer (prostate and colorectal) screening. Furthermore, half of these interventions were delivered or supported by the barbers/hair stylists. Considered together, these details suggest that barbershop/hair salon-based interventions can have a valuable direct or indirect impact in health promotion research. Most studies evaluated feasibility elements, but those were not among primary outcomes nor did any studies compare intervention components such as setting (i.e. barbershop versus church/clinic/other community site) or interventionist (i.e. barber versus clinician/community health worker/researcher). One study where the researcher was the interventionist was replicated by the study team using the barber as the interventionist, but outcomes reported differed [21]. Future research would also benefit from examining the association of racial and gender congruence between the barber/stylist interventionist and clients and the desired outcomes. More research is needed to disentangle which components of the interventions are influencing outcomes.

Limitations

There are some limitations of this systematic review. The heterogeneity of the studies (study designs, sample sizes, intervention characteristics, and outcomes) made it difficult to compare the effectiveness of intervention strategies. This was due in part to the inclusion of multiple disease states, however, there were small number of studies identified through a comprehensive search strategy. However, limiting the search to one disease state or outcome would have further restricted the number of relevant articles for inclusion. Smaller, non-RCT, short-term studies of moderate and weak quality did not support the evidence for or against the efficacy of barbershop/salon-based interventions. Self-reported data could have overpredicted effectiveness of interventions. Another limitation is that seven of the studies were conducted by the same three lead authors (three by one, two by one, and two by one) indicating potential publication bias. Finally, generalizability of the studies' findings is questionable given most studies were conducted in large, urban cities with participants of higher socioeconomic status.

Conclusions

Health promotion interventions delivered in barbershops and hair salons for African Americans appear to be modestly effective for reducing risk and improving health outcomes for obesity-related chronic diseases. Overall, the literature in this area is limited and varies in foci. The extent to which the barber/stylist is utilized warrants further investigation. Objective measurements could enhance results. While barbershops have been shown to be effective locations for recruitment of African American men, who have been the target audience for such interventions due to the difficulty with recruiting and engagement in health promotion interventions, research in hair salons with African American women deserves more attention. Moreover, interventions that address complex, layered behavior change associated

with obesity and diabetes are needed while balancing the appropriateness of desired outcomes (behavioral versus clinical). While all community-based research can be involved and complicated, it can be gleaned from this literature that barbershops/hair salon-based interventions are feasible. The barbershop/hair salon and to a further extent, the barber and hair stylist, can serve to support the implementation of existing evidence-based interventions, possibly in partnership with the health care system, to address obesity and chronic disease health inequities for African Americans.

Abbreviations

BP: Blood pressure; CBPR: Community-based participatory research; EPHPP: Effective Public Health Practice Project Quality Assessment Tool; HTN: Hypertension; NHW: Non-Hispanic whites; PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses; PROSPERO: International Prospective Register of Systematic Reviews; RCT: Randomized control trial; REDCap: Research Electronic Data Capture; SCT: Social cognitive theory; SES: Socioeconomic status; U.S.: United States

Supplementary Information

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Additional file 1. Search strategy.

Additional file 2. Data extraction form.

Additional file 3. Quality assessment form.

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Authors' contributions

KP designed and drafted the review manuscript, registered the review, coordinated the review process, and is the guarantor of the systematic review. KP, JM, JH, DM, CT, and DG contributed to the review's initial conception. KP, JM, and DG developed the search strategies and performed the search. KP, PR, and FM reviewed studies for inclusion, and extracted and analyzed data. JH, DM, CT, and DG revised and edited the manuscript. All authors have read and approved the final manuscript.

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Availability of data and materials

The datasets used for the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Competing interests

The authors have no competing interests to declare.

Author details

[1]Department of Health Promotion Sciences, Mel and Enid Zuckerman College of Public Health, University of Arizona, 1295 N Martin Avenue, Tucson, AZ 85721-0202, USA. [2]Health Sciences Library, University of Arizona, 1295 N Martin Avenue, Tucson, AZ 85721, USA. [3]Division of Public Health Practice, Mel and Enid Zuckerman College of Public Health, 550 E. Van Buren Street, UA Phoenix Plaza Building 1, Phoenix, AZ 85006, USA.

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Publisher's Note

APPENDIX B. HUMAN SUBJECTS APPROVAL

THE UNIVERSITY OF ARIZONA
Research, Discovery & Innovation

Human Subjects Protection Program

1618 E. Helen St.
P.O.Box 245137
Tucson, AZ 85724-5137
Tel: (520) 626-6721
http://rgw.arizona.edu/compliance/home

Date:	August 13, 2020
Principal Investigator:	Kelly Palmer
Protocol Number:	2007888863
Protocol Title:	Identifying the sociocultural factors of client- stylist engagement and perceptions about salon-based health promotion
Determination:	Approved
Expiration Date:	August 11, 2025

Documents Reviewed Concurrently:

Data Collection Tools: *Demographics_Client.docx*
Data Collection Tools: *Demographics_Stylist_2020_08_04.docx*
HSPP Forms/Correspondence: *Appendix Waiver v2019-08_Palmer_2020_08_04.pdf*
HSPP Forms/Correspondence: *application_v2019-12_Palmer_2020_08_04.pdf*
HSPP Forms/Correspondence: *list_of_research_personnel_v04-2020_Palmer_2020_06_03.pdf*
Informed Consent/PHI Forms: *icf_-_sbs_non-funded_or_internally-funded_consent_form_v2020-06_Palmer_2020_08_09.doc*
Informed Consent/PHI Forms: *icf_-_sbs_non-funded_or_internally-funded_consent_form_v2020-06_Palmer_2020_08_09.pdf*
Other Approvals and Authorizations: *COI Certification Complete for 2007888863.msg*
Recruitment Material: *Recruitment flyer_client_2020_08_04.pptx*
Recruitment Material: *Recruitment flyer_stylist_2020_08_04.pptx*
Recruitment Material: *Recruitment Letter_Email- Stylist_2020_08_04.docx*

Regulatory Determinations/Comments:

- The project is not federally funded or supported and has been deemed to be no more than minimal risk.
- The project listed is required to update the HSPP on the status of the research in 5 years. A reminder notice will be sent 60 days prior to the expiration noted to submit a 'Project Update' form.

This project has been reviewed and approved by an IRB Chair or designee.

- The University of Arizona maintains a Federalwide Assurance with the Office for Human Research Protections (FWA #00004218).
- All research procedures should be conducted according to the approved protocol and the policies and guidance of the IRB.
- The Principal Investigator should notify the IRB immediately of any proposed changes that affect the protocol and report any unanticipated problems involving risks to participants or others. Please refer to Guidance Investigators Responsibility after IRB Approval, Reporting Local Information and Minimal Risk or Exempt Research.

- All documents referenced in this submission have been reviewed and approved. Documents are filed with the HSPP Office.

APPENDIX C. SYSTEMATIC REVIEW SEARCH STRATEGY

Search Strategy

PubMed- October 2019
African American or African Ancestry
African American OR Black American OR African ancestry OR African continental ancestry group[MH]
Hair Salons / Barbershops
(barber NOT barber[au]) OR beautician OR hairdresser OR hairstylist OR beauty salon OR hair salon OR salon OR salons OR stylist OR stylists OR "Barbering"[Mesh] OR "hair"[mesh] OR "beauty culture"[mesh] OR "beauty shop"
Combination
(African American OR Black American OR African ancestry OR African continental ancestry group[MH]) AND ((barber NOT barber[au]) OR beautician OR hairdresser OR hairstylist OR beauty salon OR hair salon OR salon OR salons OR stylist OR stylists OR "Barbering"[Mesh] OR "hair"[mesh] OR "beauty culture"[mesh] OR "beauty shop")

APPENDIX D. SYSTEMATIC REVIEW DATA EXTRACTION FORM

Article Data Extraction

Article ID	_____ (enter ID # from Covidence)
Title	_____
First Author	_____
Year	_____
Sample Size	_____
Age range or mean age	_____
Socioeconomic Status	_____
Participants' Disease Status or Risk Factors	_____ (Did the participants have: Hypertension, Prediabetes, etc)
Geographic location	_____ (city, region, etc)
Disease state/focus	☐ Cardiovascular Disease ☐ Cancer ☐ Type 2 Diabetes ☐ Obesity
Study Design	◯ Randomized Control Trial ◯ Cluster Randomized Control Trial ◯ Posttest only ◯ Pretest-Posttest ◯ Other
Study Setting	◯ Barbershop ◯ Hair Salon ◯ Both
Intervention	_____ (Briefly describe)
Intervention Duration	_____ (reporting in weeks preferred)

Intervention follow up time points

_____

CBPR approach?

◯ Yes
◯ No
◯ Not reported

Interventionist

☐ Barber/stylist
☐ Researcher/research staff
☐ Medical Professional
☐ Other
☐ Not reported

Other

_____

Were culturally-sensitive strategies implemented?

◯ Yes
◯ No
◯ Not reported

Describe

_____

Incentives

☐ Barber/Sylist
☐ Customers
☐ Both
☐ Not reported

Theoretical Frameworks/Models

_____
(SCT, HBM, SEM, etc)

Barbershop/Hair Salon Recruitment Strategies

_____

Comparison

_____
(Briefly describe)

Primary Outcome

_____
(Be as specific as possible)

Results

_____

Significant?

◯ Yes
◯ No

Secondary Outcome(s)	
Significant Results	
Feasibility Outcomes	☐ Satisfaction with intervention ☐ Intention to continue intervention ☐ Practicality ☐ Integration ☐ Limited efficacy ☐ Other ☐ Not reported/not applicable (select all that apply)
Other	
Results	
Intervention training	
Measures of Fidelity	
Major limitations	
References to obtain	(additional references to screen)
Notes	
Article PDF	
Extracted By:	◯ Kelly ◯ Patrick
Extraction completed on:	
Reviewed by Forest?	◯ Yes ◯ No

Reviewed on: _____

APPENDIX E. SYSTEMATIC REVIEW QUALITY ASSESSMENT FORM

Quality Assessment

Article ID

_____
(enter ID # from Covidence)

Selection Bias

Are the individuals selected to participate in the study likely to be representative of the target population?

- ◯ Very likely
- ◯ Somewhat likely
- ◯ Not likely
- ◯ Can't tell

What percentage of selected individuals agreed to participate?

- ◯ 80-100% agreement
- ◯ 60-79% agreement
- ◯ less than 60% agreement
- ◯ Not applicable
- ◯ Can't tell

Rate this section

- ◯ Strong ◯ Moderate
- ◯ Weak

Study Design

Indicate the study design

- ◯ Randomized controlled trial
- ◯ Controlled clinical trial
- ◯ Cohort analytic (two group pre + post)
- ◯ Case-control
- ◯ Cohort (one group pre + post (before and after))
- ◯ Interrupted time series
- ◯ Other
- ◯ Can't tell

Was the study described as randomized?

- ◯ Yes
- ◯ No

Was the method of randomization described?

- ◯ Yes
- ◯ No

Was the method appropriate?

- ◯ Yes
- ◯ No

Rate this section

- ◯ Strong ◯ Moderate
- ◯ Weak

Confounders

Were there important differences between groups prior to the intervention?

- ◯ Yes
- ◯ No
- ◯ Can't tell

(race, sex, martial status/family, age, SES, education, health status, Pre-intervention score on outcome measure)

Indicate the percentage of relevant confounders that were controlled (either in the design (e.g. stratification, matching) or analysis)?	◯ 80 - 100% (most) ◯ 60 - 79% (some) ◯ Less than 60% (few or none) ◯ Can't Tell
Rate this section	◯ Strong ◯ Moderate ◯ Weak

Blinding

Was (were) the outcome assessor(s) aware of the intervention or exposure status of participants?	◯ Yes ◯ No ◯ Can't tell
Were the study participants aware of the research question?	◯ Yes ◯ No ◯ Can't tell
Rate this section	◯ Strong ◯ Moderate ◯ Weak

Data Collection Methods

Were data collection tools shown to be valid?	◯ Yes ◯ No ◯ Can't tell
Were data collection tools shown to be reliable?	◯ Yes ◯ No ◯ Can't tell
Rate this section	◯ Strong ◯ Moderate ◯ Weak

Withdrawals and Drop-Outs

Were withdrawals and drop-outs reported in terms of numbers and/or reasons per group?	◯ Yes ◯ No ◯ Can't tell ◯ Not applicable (i.e. one time surveys or interviews)
Indicate the percentage of participants completing the study. (If the percentage differs by groups, record the lowest).	◯ 80 - 100% ◯ 60 - 79% ◯ Less than 60% ◯ Can't Tell ◯ Not Applicable (i.e. Retrospective case-control)
Rate this section	◯ Strong ◯ Moderate ◯ Weak ◯ Not applicable

Intervention Integrity

What percentage of participants received the allocated intervention or exposure of interest?

- ◯ 80 - 100%
- ◯ 60 - 79%
- ◯ Less than 60%
- ◯ Can't Tell

Was the consistency of the intervention measured?

- ◯ Yes
- ◯ No
- ◯ Can't tell

Is it likely that subjects received an unintended intervention (contamination or co-intervention) that may influence the results?

- ◯ Yes
- ◯ No
- ◯ Can't tell

Analyses

Indicate the unit of allocation

- ◯ Community
- ◯ Organization/Institution
- ◯ Practice/Office
- ◯ Individual

Indicate the unit of analysis

- ◯ Community
- ◯ Organization/Institution
- ◯ Practice/Office
- ◯ Individual

Are the statistical methods appropriate for the study design?

- ◯ Yes
- ◯ No
- ◯ Can't tell

Is the analysis performed by intervention allocation status (i.e. intention to treat) rather than the actual intervention received?

- ◯ Yes
- ◯ No
- ◯ Can't tell

Component Ratings

	Strong	Moderate	Weak
Selection Bias	◯	◯	◯
Study Design	◯	◯	◯
Confounders	◯	◯	
◯		Blinding	◯
	◯	◯	
Data Collection Methods	◯	◯	
◯		Withdrawals and Drop-Outs	
	◯	◯ ◯	
◯		◯	

GLOBAL RATING FOR THIS PAPER

- Strong (no weak ratings)
- Moderate (one weak rating)
- Weak (2 or more weak ratings)

Is there a discrepancy between the two reviewers with respect to the component ratings?

◯ Yes ◯ No
(With both reviewers discussing the ratings)

Indicate the reason for the discrepancy

- ◯ Oversight
- ◯ Differences in interpretation of criteria
- ◯ Differences in interpretation of study

Final decision of both reviewers	◯ Strong ◯ Moderate ◯ Weak

APPENDIX F. SEMI-STRUCTURED INTERVIEW QUESTIONS

Objective I- The Stylist Identity

1) How would you describe yourself as a stylist? How would others or your clients describe you?
2) What sets you apart from other stylists?
    a. How does your view of yourself as a stylist compare with other stylists you know?
3) What type of stylist do you wish you could be?
    a. What keeps you from this ideal?

Objective II- The Stylist-Client Relationship.

1) How would you describe your relationships with your clients?
2) How would you describe the way you interact with your clients?
    a. What kinds of interactions do you have beyond their service appointments?
3) What influence do you think you have on your clients?
    a. What types of things do you think you influence in your clients' lives?
4) What influence do your clients have on who you are as a stylist/person?
5) How does your gender/race/ethnicity impact your relationship with your clients?
    a. How does being a (insert their race/ethnicity/gender) impact your relationship with your Black female clients?

Objective III- Perceptions about Salon-Based Health Promotion.

1) How can stylists and/or the salon help improve the health of Black women/their clients?
2) What are some advantages or disadvantages of doing health promotion in the salon?
3) What are some facilitators and/or barriers to salon-based health promotion intervention?
4) What types of health programs would you like to engage with? What topics are of interest to you?
5) At what level would you like to be involved (allow an outsider in, distribute info, talk to clients, place posters/etc. in the salon, refer clients to health agencies/resources, show a video, lead a social media campaign, host activities off hours in the salon or in the parking lot)
6) What would be a benefit to the salon in participating in health programming?
    a. What would make it worthwhile?
7) How do you think your clients would receive health promotion in the salon?
    a. Who/what would they be most receptive to?
8) How does or how can the salon environment support healthy lifestyles for clients?

Objective IV- The Role of the Salon in the African American/Black Community

1) What role do you think the salon plays for the African American community
2) What significance do you think the salon has for African American women?
3) What influence does the larger community have on who you are as a stylist?

Objective V- Shop Talk.

1) What health topics, if any, do you and your clients typically discuss during an appointment?
    a. What are the most common health topics discussed?
2) What health topics would you not feel comfortable discussing with your clients?

3) Do clients seek information or guidance with any health issues (resources, shared experiences, etc.) from you or others in the salon?
4) How do other stylists and customers engage with one another if at all?

APPENDIX G. STYLIST SURVEY

Stylist Survey

Please complete the brief survey below. Once you are finished you will be directed to a site to schedule a day/time for your interview.

Thank you!

How did you hear about the study?	◯ Social media ◯ Organization ◯ Event ◯ Direct contact/referral
Which social media site?	◯ Facebook ◯ Twitter ◯ Instagram ◯ LinkedIn ◯ Other
Was it a group page where you saw the study advertised?	◯ Yes ◯ No
What was the name of the group where you saw the study advertised?	_____
Were you tagged in a posting about the study?	◯ Yes ◯ No
What is the name of the organization where you saw the study advertised?	_____
What is the name of the event where you saw the study advertised?	_____
Were you directly contacted/referred by a:	◯ Study team member ◯ Colleague/another stylist ◯ Friend ◯ Family member ◯ Client (Choose the best option)
Select your current age range:	◯ < 18 ◯ 18-24 ◯ 25-34 ◯ 35-44 ◯ 45-54 ◯ 55-64 ◯ >64
Are you a licensed hair stylist?	◯ Yes ◯ No
I've been a licensed hair stylist for:	◯ Less than a year ◯ 1-5 years ◯ 5-10 years ◯ 10-20 years ◯ More than 20 years

Have you worked in a hair salon for at least 1 year?

◯ Yes
◯ No
(At any point in time. Not including employment at a hair school.)

What percentage of your clientele are African American women (adults)?

0 50 100

(Place a mark on the scale above)

Do you identify as?

◯ Female
◯ Male
◯ Trans- woman
◯ Trans-man
◯ Non-binary

Do you consider yourself to be Hispanic or Latino?

◯ Yes ◯ No ◯ Don't know ◯ Refuse

What race do you consider yourself to be?

☐ Black or African American
☐ American Indian/Alaska Native
☐ Asian American or Pacific Islander
☐ White or European American
☐ Other
(Check all that apply)

Other

_____

I've worked at my current salon for:

◯ Less than a year
◯ 1-5 years
◯ 5-10 years
◯ 10-20 years
◯ More than 20 years
◯ Decline to answer

Salon zip code:

_____

Are you the salon owner?

◯ Yes
◯ No
◯ Decline to answer

How many clients do you service at least once per month?

_____

What are some health topics you and your clients discuss during their service appointments?
(Select all that apply)

- ☐ Cancer
- ☐ Dementia/Alzheimer's
- ☐ Diabetes
- ☐ Diet/eating habits
- ☐ Exercise/physical activity
- ☐ Heart disease/high blood pressure
- ☐ Mental health/stress
- ☐ Smoking/substance use
- ☐ STIs/STDs
- ☐ Weight/weight loss
- ☐ Not applicable/do not discuss health topics
- ☐ Other

Other

What is the average length of time for a hair service?

- ◯ < 1hour
- ◯ 1-2 hours
- ◯ 3-4 hours
- ◯ 5-6 hours
- ◯ >6 hours

Have you been diagnosed with any of the following chronic illnesses?
(Select all that apply)

- ☐ Prediabetes or Type 2 diabetes
- ☐ Hypertension/High Blood Pressure
- ☐ Cancer (other than skin cancer)
- ☐ Asthma
- ☐ Mental health (depression, psychological distress, etc.)
- ☐ Other
- ☐ None/Not Applicable

Other

General Comments

Comments

APPENDIX H. FOCUS GROUP DISCUSSION QUESTIONS

Objective I- The Stylist Identity

1) Tell me about your stylist? What do you like about them?
2) What is the salon like that you go to?
    b. Open/shared vs. single studio

Objective II- The Stylist-Client Relationship.

3) How would you describe your relationship with your stylist?
    b. What kinds of interactions do you have beyond their service appointments?
4) What influence does your stylist have on who you?
5) How does your stylist's age/gender/race/ethnicity impact your relationship?

Objective III- Perceptions about Salon-Based Health Promotion.

6) If your stylist or salon hosted a health program, as a client what would you be open to? What would it look like?
    a. Examples: pamphlets/signage, stylist talking to you about health topic/screening, expert coming in to talk/screenings, videos, off hours events
7) How can stylists and/or the salon help improve or support the health of Black women/their clients? What would set the Black salon apart from health promotion in churches, barbershops, or other settings in reaching Black women?

Objective IV- Salon Significance

8) How would you describe the Black salon to someone who was not familiar with it? What is the culture or environment like?
9) What do you get from going to the salon aside from haircare?
10) What significance do you think the salon has for African American women?

APPENDIX I. CLIENT SURVEY

Client Survey

Please complete the brief survey below. The focus groups are now closed.

Thank you!

How did you hear about the study?	◯ Social media ◯ Organization ◯ Event ◯ Direct contact/referral
Which social media site?	◯ Facebook ◯ Twitter ◯ Instagram ◯ LinkedIn ◯ Other
Was it a group page where you saw the study advertised?	◯ Yes ◯ No
What was the name of the group where you saw the study advertised?	_____
Were you tagged in a posting about the study?	◯ Yes ◯ No
What is the name of the organization where you saw the study advertised?	_____
What is the name of the event where you saw the study advertised?	_____
Were you directly contacted/referred by a:	◯ Study team member ◯ Colleague/another stylist ◯ Friend ◯ Family member ◯ Client (Choose the best option)

We would like to learn a little about you. Please select the answers to the following set of questions that BEST describes you.

Select your current age range:	◯ < 18 ◯ 18-24 ◯ 25-34 ◯ 35-44 ◯ 45-54 ◯ 55-64 ◯ >64
Do you identify as?	◯ Female ◯ Male ◯ Trans- woman ◯ Trans-man ◯ Non-binary ◯ Prefer to not answer

What race do you consider yourself to be?

- ☐ Black or African American
- ☐ American Indian/Alaska Native
- ☐ Asian American or Pacific Islander
- ☐ White or European American
- ☐ Other

(Check all that apply)

Other

_____

Do you consider yourself to be Hispanic or Latino?

◯ Yes ◯ No ◯ Don't know ◯ Prefer not to answer

Residential/home zip code:

_____

What is the highest level of school you have completed or the highest degree you have received?

- ◯ 8th grade or less
- ◯ Some high school, but did not graduate
- ◯ High school graduate or GED
- ◯ Some college, or 2-year college degree
- ◯ 4-year college graduate
- ◯ More than 4-year college degree
- ◯ Prefer to not answer
- ◯ Don't know

What is your total household income?

- ◯ Less than $10,000
- ◯ More than $10,000 but less than $15,000
- ◯ More than $15,000 but less than $25,000
- ◯ More than $25,000 but less than $35,000
- ◯ More than $35,000 but less than $50,000
- ◯ More than $50,000 but less than $75,000
- ◯ More than $75,000
- ◯ Prefer not to answer
- ◯ Don't Know

Which best describes your current relationship status:

- ◯ Married/Domestic Partnership
- ◯ Widowed
- ◯ Divorced
- ◯ Separated
- ◯ Never Married/Single
- ◯ Living with Partner
- ◯ Prefer not to answer
- ◯ Don't Know

How many people (adults and children) are currently living in your household, including yourself?

_____

How many are adults?

_____

How many are children/minors?

_____

The next set of questions will help us understand more about your health and healthcare needs

In general, would you say you health is?
- ◯ Excellent
- ◯ Very Good
- ◯ Good
- ◯ Fair
- ◯ Poor

Do you have health insurance?
- ◯ Yes
- ◯ No

Which option best describes your primary source of health insurance:
- ◯ Private/Employer Sponsored (Aetna/United Healthcare/BCBS/etc.)
- ◯ Government Sponsored (Medicare/Medicaid)
- ◯ Military Sponsored (TRICARE- VA/CHAMP- VA)
- ◯ Prepaid Health Plan (HMOs)
- ◯ Other

Other

_____

Do you have one person you think of as your personal doctor or (primary) health care provider?
- ◯ Yes
- ◯ No

Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?
- ◯ Yes
- ◯ No

A routine checkup is a general physical exam, not an exam for a specific injury, illness, or condition. About how long has it been since you last visited a doctor for a routine checkup?
- ◯ Within the past 6 months
- ◯ Within the past year (6-12 months ago)
- ◯ Within the past 2 years (1 year but less than 2 years ago)
- ◯ Within the past 5 years (2 years but less than 5 years ago)
- ◯ 5 or more years ago

Have you been diagnosed with any of the following chronic illnesses? (Select all that apply)

- ☐ Prediabetes or Type 2 diabetes
- ☐ Hypertension/High Blood Pressure
- ☐ Cancer (other than skin cancer)
- ☐ Asthma
- ☐ Mental health (depression, psychological distress, etc.)
- ☐ Other
- ☐ None/Not Applicable

Other

_____

People sometimes look to others for companionship, assistance, or other types of support. How often is each of the following kinds of support available to you if you need it? Choose one option from each line.

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
Someone you can count on to listen to you when you need to talk	◯	◯	◯	◯	◯
Someone to give you information to help you understand a situation	◯	◯	◯	◯	
Someone to give you good advice about a crisis	◯	◯	◯	◯	◯
Someone to confide in or talk to about yourself or your problems	◯	◯	◯	◯	
Someone whose advice you really want	◯	◯	◯	◯	
Someone to share your most private worries and fears with	◯	◯	◯	◯	
Someone to turn to for suggestions about how to deal with a personal problem	◯	◯	◯	◯	
Someone who understands your problems	◯	◯	◯	◯	

The last set of questions is about your experiences with and preferences for your salon/stylist. Please answer these questions based on the stylist/salon you "regularly" go to for hair care services and as they best describe your pre-pandemic activity.

What city is the salon where you receive hair care services located in? _____

What is the zip code of the salon where you receive hair care services?: _____

I've been going to my current salon/stylist for:

- ◯ Less than a year
- ◯ 1-5 years
- ◯ 5-10 years
- ◯ 10-20 years
- ◯ More than 20 years
- ◯ Decline to answer

On average, I go to the salon:

- ◯ Every week
- ◯ Every 2 weeks
- ◯ Every 4 weeks/once per month
- ◯ Every 6 weeks
- ◯ Every 8 weeks
- ◯ Once per quarter/every 3 months
- ◯ Once or twice per year

What characteristics are most important to you in a stylist?

- ☐ Technique- someone who is very skilled and stays educated on (healthy hair, color, cut, styling, etc.)
- ☐ Personality- someone that I can "connect" with and trust
- ☐ Creativity/Trendiness- someone who is "up" on the latest styles
- ☐ Timeliness- someone who works efficiently and respects my time
- ☐ Affordable- someone with reasonable/economic friendly prices for services
- ☐ Professionalism- someone who provides great customer service (clean environment, etc.)

(Check all that apply)

Have you ever followed a stylist to a different salon or location?

- ◯ Yes
- ◯ No

What are some challenges to receiving hair care services in the salon regularly?

- ☐ Cost
- ☐ Time/Schedule Conflicts/Too Busy
- ☐ Childcare
- ☐ Transportation
- ☐ Finding a salon/stylist I like
- ☐ Other

Other

_____

What are some health topics you and your stylist discuss during your hair appointments? (Select all that apply)

- ☐ Cancer
- ☐ Dementia/Alzheimer's
- ☐ Diabetes
- ☐ Diet/eating habits
- ☐ Exercise/physical activity
- ☐ Heart disease/high blood pressure
- ☐ Mental health/stress
- ☐ Smoking/substance use
- ☐ STIs/STDs
- ☐ Weight/weight loss
- ☐ Not applicable/do not discuss health topics
- ☐ Other

Other

_____

COVID-19 Impact

How has the COVID-19 pandemic impacted your salon attendance?	◯ Not at all, I have maintained my regular service appointments throughout the pandemic. ◯ Somewhat, I missed some appointments in the beginning, but have resumed regular service appointments. ◯ Mostly, I have not had regular service appointments/I have been to the salon only a few times during the pandemic. ◯ Completely, I have not been to the salon during the pandemic. (Choose the best option)
Which best describes your intentions to resume regular service appointments at the salon?	◯ I have no intentions to resume regular service appointments at the salon ◯ I plan to resume regular service appointments at the salon once I get the vaccine ◯ I plan to resume regular service appointments once it is financially feasible again ◯ Other (Choose the best option)
Other	_____
Are you interested in participating in a focus group discussion about your hair salon experiences?	◯ Yes ◯ No

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