1-1-2021

A Provider Toolbox on Cardiovascular Disease Prevention in Women of Color in the Primary Care Setting

Ellerey C. Nelson
Seattle University

Recommended Citation

A Provider Toolbox on Cardiovascular Disease Prevention in Women of Color in the Primary

Care Setting

Ellerey C. Nelson, RN, BSN

A DNP project submitted in partial fulfillment of the

requirements for the degree of

Doctor of Nursing Practice

Seattle University

March 2021

Approved by: _~~Lisa Abel~~_____   Date: __03/17/21_____

DNP Faculty Mentor: Lisa Abel, DNP, MSN, ARNP, WHNP-BC

.

Table of Contents

Acknowledgements

I would like to thank my project mentor, Dr. Lisa Abel, for her guidance and support in the planning and implementing my DNP project. I would also like to thank Gloria Fisher-Herrera, ARNP at Sea Mar Monroe, for supporting my project at her clinic. Finally, thank you to my husband and family for encouraging me throughout this process.

Abstract

Purpose. The purpose of this practice improvement project was to increase cardiovascular disease (CVD) knowledge in women of color (WOC) in the primary care setting through enhanced provider to patient education through implementation of a provider toolbox.

Background. CVD is the number one cause of death in women in the United States. However, WOC have a higher incidence of CVD than White women. Additionally, WOC have been found to have a decreased knowledge and awareness of CVD, demonstrated by numerous national studies. Therefore, the primary investigator (PI) identified a need to increase CVD knowledge and awareness in WOC in order to improve heart health outcomes in this patient population.

Methods. An evidenced-based toolbox on CVD prevention in WOC for provider use was assembled by the PI. The toolbox was distributed to providers at Sea Mar Monroe clinic with an accompanying voiceover PowerPoint with instructions for intended use. A follow up mixed-methods survey was sent to participants which aimed to evaluate the toolbox itself, its expected impact on patient outcomes and identify implications for future practice. **Results.** All participants (n=4) strongly agreed that the toolbox informed their knowledge on this clinical practice issue, strongly agreed that it will help them optimize cardiovascular health in WOC, and strongly agreed that it will facilitate evidenced-based practice. Half of the participants strongly agreed, and half agreed, that they felt better equipped to address this clinical practice issue after using the toolbox. Themes identified included time as a barrier for optimal CVD education for both patients and providers, conceptualizing race as a specific risk factor and lack of prioritization to take preventative action by WOC. **Conclusion.** WOC have a higher incidence of CVD paired with a decreased knowledge and understanding. Primary care providers are in a unique position to close this knowledge gap through patient education to reduce health

disparities in this population. This toolbox resource facilitated provider to patient CVD education in WOC.

Keywords: Cardiovascular disease, heart disease, women of color, patient education

Introduction

Cardiovascular disease (CVD) is the number one killer of women in the United States, claiming over 400,000 lives each year (American Heart Association, 2018). However, CVD affects women of color (WOC) more often than White women. The prevalence of CVD is approximately 48% in Black women, compared to 35% in Caucasian women (American Heart Association, 2018). Additionally, African American women have the highest age-adjusted mortality rate from CVD out of any female racial or ethnic group in the United States (Villablanca et al., 2010), and Hispanic women are more likely to have risk factors associated with CVD such as diabetes, overweight or obesity and physical inactivity (Giardina et al., 2013).

In addition to having a higher rate of CVD compared to White women, women of color demonstrate decreased CVD knowledge and awareness (Reeder, 2017; Villablanca et al., 2016b). Knowledge and awareness of CVD may include heart disease as the leading cause of death in women, risk factors, preventative measures, signs and symptoms of a heart attack, and when and how to take emergency action. The American Heart Association (AHA) found that only 36% of Black women and 34% of Hispanic women identified heart disease as the leading cause of death in women, compared to 65% of White women in their national survey (2018). Therefore, the population with the highest risk for CVD possesses the least knowledge on what can be done to prevent the occurrence of disease. Additionally, physicians are more likely to falsely rate women at lower risk for CVD than men and underutilize preventative therapies (Bairey Merz, 2017; Wenger, 2012). Thus, there is a need to close this gap in heart health knowledge between women of color and White women in order to reduce further health disparity, hence the purpose of this project.

Purpose & Aims

The purpose of this project is to increase CVD knowledge and awareness in WOC in the primary care setting through enhanced provider to patient education. The first aim was to assemble a toolbox containing evidenced-based resources that would guide healthcare providers in both patient education and the cardiovascular care of WOC. The second aim was to present the toolbox to healthcare providers at the clinic and engage with them to utilize the toolbox as a resource to facilitate preventative strategies with WOC. The third aim was to inform healthcare providers on WOC's decreased CVD knowledge and awareness so that they would take special care to educate this patient population.

Background & Significance

Previous Efforts to Raising Awareness

CVD is a largely misunderstood disease by many. The false belief that CVD is predominately a man's disease still persists in society in present day (Galbraith, Mehta, Veledar, Vaccarino, & Wenger, 2011). These misunderstandings encourage women to shy away from protecting themselves from CVD because they do not personally think they are at risk. Unfortunately, the literature reveals that even physicians are more likely to falsely rate women at lower risk for CVD than men (Bairey Merz, 2017; Villablanca et al., 2010; Wenger, 2012). The truth is that CVD impacts one in four women in the United States and is the leading cause of death in both men and women (Reeder, 2017). Therefore, CVD is a substantial threat to women's health that many people, even doctors, underestimate. Awareness of CVD as the leading cause of death in women has been positively associated with healthy lifestyle modifications and preventive action in women (Christian et al., 2007). Efforts to increase knowledge and awareness are necessary to encourage healthy behaviors in American women.

Historically, efforts have been made by the American Heart Association to increase CVD knowledge and awareness among American women over the last two decades. These campaigns have been largely successful, nearly doubling awareness since 1997 (Villablanca et al., 2010). While CVD knowledge and awareness have increased in White women over that time period, gains have stagnated in WOC (AHA, 2018; Christian et al., 2007). This lack of knowledge and awareness is therefore creating further health disparities.

Low Awareness in WOC

Present literature reveals that WOC have decreased knowledge and awareness of CVD compared to White women (AHA, 2018). The majority remain unaware that CVD is a potential threat to their wellbeing and, therefore, may not understand the importance of taking preventative measures even after many awareness-raising campaigns. Knowledge and awareness were found to be significantly lower in all groups of WOC, including Black, Hispanic and American Indian women, compared to White women in a survey by Villablanca, Slee, Lianov, & Tancredi (2016b). Data from another survey found that Black and Hispanic women were 66% less likely than White women to correctly identify heart disease as the number one killer of women as a whole, and that difference did not differ substantially between those two groups (Mochari-Greenberger, Miller, & Mosca, 2012). Christian et al. (2007) concluded that awareness was significantly lower in Black and Hispanic women than White women. The same survey reported that Hispanic women were more likely to state that "there is nothing they can do to prevent their risk of heart disease". Asian women were also identified to have less CVD knowledge and felt the least motivated to change their modifiable risk factors in a study conducted by Galbraith et al. (2011). Overall, knowledge, awareness and how to take preventative measures is cited as lowest in groups of WOC throughout the relevant literature.

Highest Risk and Lowest Awareness

There is a high level of disparity among groups of WOC in regard to CVD prevalence, morbidity and mortality. The literature demonstrates that knowledge and awareness is the lowest in groups of women who have the highest risk of CVD, specifically WOC (Flink, Sciacca, Bier, Rodriguez & Giardina, 2013). Out of all women in the United States, Black women have the highest prevalence and death rate from CVD (AHA, 2018). African American women suffer from the highest rates of hypertension and obesity, contributing to an increased risk of CVD (Villablanca et al., 2016a). Reeder (2017) found that the majority of African American women do not personally believe that they are personally at risk for CVD, according to the survey conducted in the study. Additionally, Hispanic women suffer from diabetes, hypertension and obesity at higher rates than White women, also putting them at a higher risk for developing CVD (Giardina et al., 2013). Both a high Framingham Risk Score, which measures CVD risk, and a diagnosis of metabolic syndrome were inversely related to CVD knowledge and awareness in a study by Flink et al. (2013). Giardina et al. (2013) established that Hispanic women who were overweight or obese also demonstrated decreased knowledge and awareness scores compared to those who were normal weight. According to these findings, CVD prevention strategies are needed in high-risk women who have the least knowledge and awareness.

Interventions for WOC

The majority of literature on the topic of WOC and CVD awareness is limited to non-experimental surveys. Few studies implement an experimental intervention that examines how educating WOC on CVD impacts overall health. However, researchers in a study by Villablanca et al. (2016a) implemented a four-month long heart health program in a cohort of African American women. The findings revealed a significant knowledge gain plus a significant

reduction in clinical risk factors such as waist circumference, serum cholesterol levels and inflammatory biomarkers. Participants also demonstrated a 60% decrease in metabolic syndrome in the cohort of women studied. In another study, Villablanca et al. (2010) researchers implemented a six-month long program that involved education, health behavior counseling and risk reduction strategies in a group of women who were clinically at high risk for CVD. This intervention showed a significant increase in knowledge and awareness. Additionally, there was a general decrease in systolic blood pressure and LDL cholesterol with an increase in HDL cholesterol among participants.

In conclusion, the present literature reveals that WOC, who have the highest risk for CVD, have the least knowledge and awareness. Therefore, efforts to educate WOC on CVD prevention and provide them with strategies to reduce their risk is an area of practice that can be improved upon, and advanced practice providers and physicians are well-suited to help close this knowledge gap in patients who are WOC.

Theoretical Framework

The theoretical framework used for this project was the Promoting Action on Research Implementation in Health Services (PARIHS) Model. This framework focuses on the implementation of research into practice through the interplay of three core elements: evidence, context and facilitation (Rycroft-Malone, 2004). It served as a guide for the implementation elements needed for successful adoption of the toolbox by the providers. Evidence refers to knowledge from a variety of sources found to be credible. The element of evidence corresponds to the assembly of a toolbox containing evidenced-based resources. Context refers to the environment or setting in which people receive health services and the setting in which research evidence is brought into practice. The element of context refers to the primary care clinic in

which the toolbox will be implemented. The last element, facilitation, refers to the process of enabling the implementation of evidence into practice. It also refers to leadership within the organization and readiness for implementation of the project. This corresponds with the project aim of bringing the research into practice through a convenient and user-friendly toolbox.

Methods

Design

This project was a practice improvement project with a summative survey evaluation. The purpose of this project was to increase cardiovascular disease (CVD) knowledge and awareness in women of color (WOC) in the primary care setting through enhanced provider to patient education. The first aim was to assemble a toolbox containing evidenced-based resources that will guide healthcare providers in both patient education and the cardiovascular care of WOC. The second aim was to present the toolbox to healthcare providers at a primary care clinic and engage them to utilize the toolbox as a resource to facilitate preventative strategies with WOC. The third aim was to inform healthcare providers on WOC's decreased CVD knowledge and awareness so that they may better educate this patient population. The toolbox is a means of disseminating information to providers in order to improve clinical practice and the health outcomes of this patient population. The utility of the toolbox, its expected impact on patient outcomes, provider knowledge after viewing the toolbox and presentation and implications for future practice were evaluated through an online survey. This project was submitted to Seattle University's Institutional Review Board (IRB) and determined not to be human subjects research and, therefore, exempt from further review.

Setting

The setting of this practice improvement project was Sea Mar Community Health Center's Monroe location located in Monroe, Washington in Snohomish County. However, all interaction with participants and all project processes were conducted virtually over Zoom or email due to the COVID-19 pandemic and social distancing guidelines. The Monroe clinic serves a diverse population of patients. Majority of the patients at Sea Mar Monroe are low income earners and are underinsured or uninsured, and 80% are Latino and Spanish speaking.

Recruitment Plan & Participants

Inclusion criteria for participation was providers at the clinic (including physicians, advanced registered nurse practitioners [ARNPs], physician assistants [PAs] or registered nurses [RNs]) and relevant clinic personnel including health educators, care coordinators or nutritionists. Exclusion criteria was medical assistants (MAs) and other support or office staff. The site preceptor, an ARNP working at the clinic, identified the participants who met inclusion criteria. One ARNP, four physicians, a health educator and a chronic care coordinator met inclusion criteria. They were recruited via email by the primary investigator (PI). Participation was defined as reviewing the toolbox, using it as a clinical resource in practice as appropriate and participating in a follow up survey. Participation in this project was voluntary.

Intervention and Data Collection Procedures

The toolbox was assembled and formatted into a PDF document by the PI (See Appendix A). The toolbox's contents include general information on CVD, current practice guidelines, local and national health indicators and statistics, patient education topics and resources, and cultural considerations. The toolbox was distributed as an attachment to participants via email. The body of the email contained a letter to participants that introduced the project and its intention. A project timeline was also given. An accompanying voiceover PowerPoint

presentation was also provided which gave further background on the project and instruction on the toolbox's intended use. The rationale for a voiceover PowerPoint was so that participants would be able to view the presentation on their own time, facilitating convenience and accommodating varying work schedules. The presentation encouraged participants to utilize the toolbox resource in clinical practice. Six weeks later, a link to a Qualtrics survey was emailed to participants. The aim of the survey questions was to evaluate the participant's awareness of this clinical practice issue, participant's assessment of the utility of the toolbox, its expected impact on patient outcomes and identify implications for future practice. When participants clicked on the link to the survey, there was an informed consent statement before the first question. Consent was obtained by participants proceeding to the first question. Participants were encouraged to complete the survey within two weeks with a reminder email sent one week in between. However, due to low response rate, the PI sent an additional reminder via email four weeks after the survey was initially distributed. The survey responses were kept anonymous. The PI analyzed the survey results and formatted them into an executive summary that included both a written explanation of the results and bar graphs depicting specific quantitative data. It was then distributed to the participants via email (See Appendix B).

Measures and Instruments

The survey used in this project was a mixed methods survey because it included both five-point Likert scale questions and free response questions (see Appendix C). The Likert scale is a widely used instrument that assesses attitude by allowing participants to rate how much they agree or disagree with a given statement. It assumes that the strength of an attitude is linear and that attitudes can be measured in a quantifiable way (McLeod, 2019). There were four questions, written as statements, and participants rated their attitudes on a five-point scale from strongly

agree, somewhat agree, neither agree nor disagree, somewhat disagree and strongly disagree. Reliability was increased by using a five-point Likert scale for survey responses as opposed to three- or four-point scales (McKelvie, 1978). There were five free response questions. Free response questions are intended to elicit respondent comments, opinions, recommendations or suggestions. Social desirability has been shown to reduce the validity of surveys, therefore, keeping the survey responses anonymous was an effort to increase the validity of this evaluation (McLeod, 2019).

Data Analysis

Data for analysis was obtained through the mixed methods Qualtrics survey described above. The quantitative data was analyzed individually as a Likert-type item, rather than as a composite scale which is done in traditional Likert-scales (Boone & Boone, 2012). The reason for this is because the survey questions aimed to assess varying topics surrounding the toolbox, so it would not have been logical to interpret them as a composite score. Data from the Likert-type is ordinal, and therefore, underwent descriptive statistics using Microsoft Excel. Frequencies were counted and the median and mode were determined to assess central tendency of responses. The qualitative data obtained from the free response questions underwent content analysis for themes using Microsoft Word. Themes were grouped into broad, overarching categories and then compared and contrasted. The frequencies were depicted in bar graph format. Median and mode were also calculated and described. The qualitative data was summarized in paragraph format.

Results

The participant survey had a 50% response rate (n=4). Overall, participants evaluated the toolbox resource itself favorably. The quantitative data from the Likert-type items and fill in the

blank item is described below with accompanying bar graphs indicating the frequency of

responses. The qualitative data from the free response questions is summarized below, organized
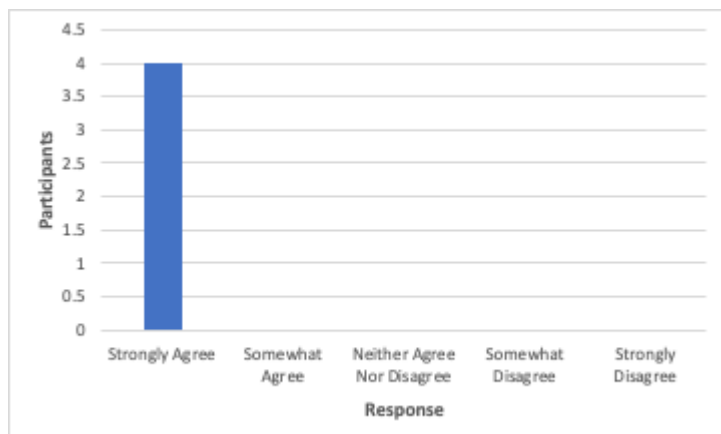
by each question.

Quantitative Data

Fill in the Blank Item. Participants were asked to estimate how many WOC patients

they see on a weekly basis for CVD (question 1). The mean was 15.3 patients according to

participants who answered this question (n=3). The median was 8 patients.

Likert-Type Items. All participants (n=4) strongly agreed that the toolbox informed their

knowledge on WOC and CVD (see Figure 1). Half of the participants strongly agreed that they

felt better equipped to address this clinical practice issue after viewing the toolbox and its

presentation, and the other half of participants somewhat agreed (see Figure 2). All participants

strongly agreed that the toolbox would enable them to optimize cardiovascular care of WOC at

risk for CVD (see Figure 3). All participants strongly agreed that the toolbox resource will help

them facilitate evidence-based practice in their practice setting (see Figure 4).

The median and mode were analyzed to determine central tendency of responses. The

scale for the responses ranged from numbers 1 through 5, with 1= strongly disagree and 5=

strongly agree. Based on this information, it can be determined that the central tendency of

responses was consistent with "strongly agree" for all questions except question three, which

ranged from "agree" to "strongly agree" (see Table 1).
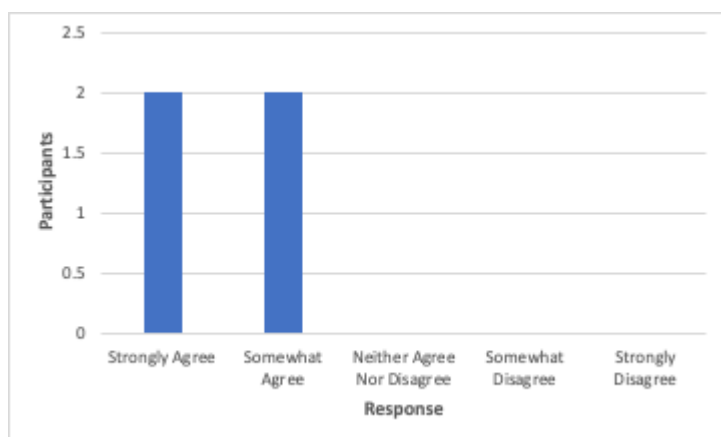
Figure 1

Question 2

Note. "This toolbox has informed my knowledge on this clinical practice issue."
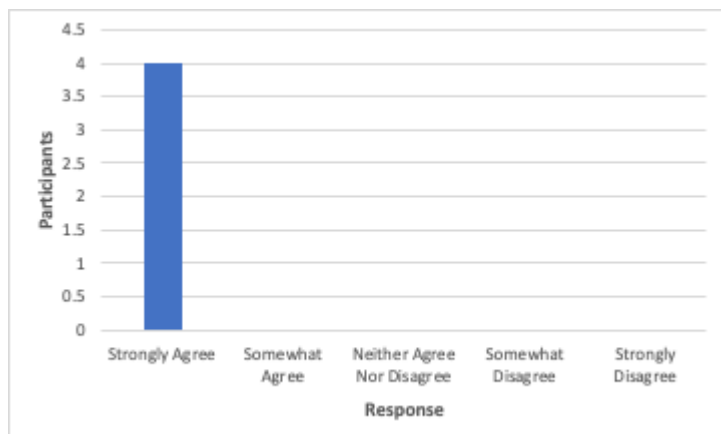
Figure 2

Question 3

Note. "I feel better equipped to address this clinical practice issue after viewing this toolbox and presentation."
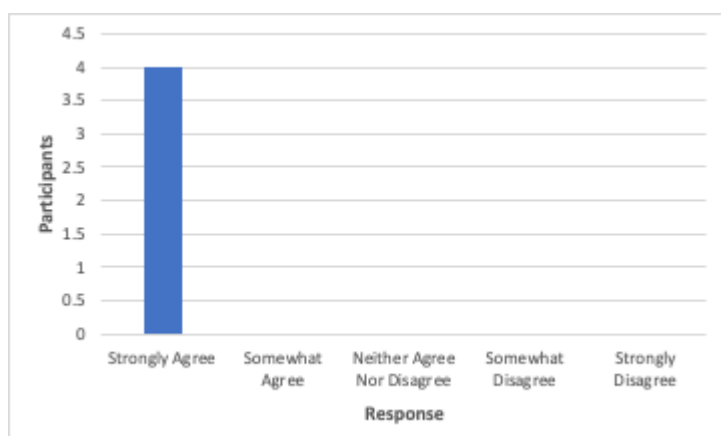
Figure 3

Question 4

Note. "The toolbox will enable me to optimize the cardiovascular care of women of color at risk for CVD."

Figure 4

Question 5

Note. "I anticipate that the toolbox resources will help me to facilitate evidence-based practice in my practice setting."

Table 1

Median and Mode of Likert-Type Item Responses

Variable	Median	Mode
Question 2	5	5
Question 3	4.5	4, 5
Question 4	5	5

Question 5	5	5

Qualitative Data

Of the four participants who responded to the survey, only three participants completed the free response questions (n=3). There was a total of four free response questions that underwent content analysis for themes. The common themes identified were conceptualizing race as a specific risk factor, time as a barrier for both providers and WOC, and money and lack of prioritization as barriers for WOC. In addition to common themes, other findings are described below due to the small sample size.

How has this toolbox impacted your approach to care of patients who are women of color at risk for cardiovascular disease? Please explain. The common theme identified in the analysis of the above question was specific risk factors for groups of WOC. One participant stated, "I think it becomes second nature to always approach every patient in an algorithmic way, and sometimes we forget that there are all these other variables such as race." Another participant reported that the toolbox has "made it easier for patients to understand how at risk they are" according to their race or ethnicity.

How do you expect that provider use of this toolbox will impact patient outcomes? Please explain. Answers to the above question varied by participant, therefore, no common themes were identified. However, one participant addressed visualization as a way to help patients better understand medical concepts. Another participant reported that the toolbox gave them a better understanding of this clinical practice issue and how to approach it.

What barriers do you believe providers face in providing CVD education to patients? Please explain. Time was the common theme across all participant responses. One

participant reported fifteen-minute appointment times are a barrier to executing the best care, including education, and another reported that there is not enough time allotted to cover everything in detail in a single patient visit.

What barriers do you believe patients who are women of color face in taking action to prevent their risk of CVD? Please explain. Both time and money were identified as a major barrier to WOC seeking preventative care or following up on appointments. Participants expressed that financial barriers decrease patient willingness to seek out preventative care. Another theme was family prioritization. Participants described WOC patients as mothers, spouses and full-time workers, making them more likely to put their own health "on the back burner" and prioritize family needs above their own. Additionally, one participant identified lack of understanding and a need for repeat education as a barrier.

Discussion

Overall, this practice improvement project was evaluated favorably by participants through a summative survey evaluation. The survey questions aimed to evaluate changes in provider knowledge of this clinical practice issue after using the toolbox and viewing its presentation, the utility of the toolbox, its expected impact on patient outcomes and identify implications for future practice.

Limitations

A primary limitation of this project was the limited number of participants. Sea Mar Monroe is a small clinic and only eight participants were identified as eligible and, therefore, invited to use the toolbox and participate in the follow up survey. Retrospectively, it may have been useful to ask participants whether or not they actually used the toolbox. However, based on the number or participants who responded to the survey, it is likely that only four of the eight

total participants used the toolbox. For this reason, data for analysis was limited for both the Likert-type items (n=4) and fill in the blank and free response questions (n=3). However, participant's responses were mostly consistent, giving the data some degree of meaningfulness.

Another limitation was participant engagement. Engaging with participants was challenging due to the COVID-19 pandemic. The PI was limited to email as a means of communicating with participants and it can be inferred that face-to-face communication would have boosted participation and enthusiasm. However, this was not possible due to social distancing guidelines at the time of implementation. Additionally, the site preceptor indicated that it was challenging for participants to find extra time to review project materials due to increased workload and demands of the clinic associated with the pandemic.

Implications for Future Practice

The information and resources in the toolbox served as a useful resource in both increasing provider awareness of this health disparity and educating WOC patients on CVD as indicated in the survey results. In the long term, it is predicted that participant use of this toolbox will improve health outcomes in this patient population if toolbox use is continued. Participants should note that practice guidelines may be updated in the future and will need to make changes accordingly if they wish to continue toolbox use.

Time is found to be a barrier for both providers and patients. Providers express difficulty providing in-depth education on CVD prevention due to short appointment times, and providers report that patients are often unable or unwilling to take the time for preventative care and follow up. A potential solution to this dilemma would be to include alternate forms of CVD education in addition to typical provider-to-patient verbal education. Providers at Sea Mar Monroe may use EPIC's patient education materials on CVD and attach it to the after-visit summary. This has the

potential to increase patient education in a manner that is time-sparing for both patients and providers. Additionally, providers may take advantage of referring WOC at risk for CVD to the clinic health educator or dietician for further counseling.

Additionally, this toolbox has the potential to be used in other practice settings where primary and preventative care is delivered. With the exception of health indicators specific to Snohomish County and Washington state, the toolbox is generalizable to a national audience. Local statistics may be updated or removed if it were to be used in a different geographical location. Additionally, Sea Mar Monroe may wish to distribute this toolbox to their other clinic locations throughout Washington State.

Conclusion

Disparities in both CVD risk and CVD knowledge and awareness exist among women of color in the United States. Primary care providers are in a position to ameliorate these disparities by providing patient education on this topic and partnering with patients on risk reduction strategies. This practice improvement project demonstrated that a provider toolbox of CVD in WOC was beneficial in raising both provider and patient knowledge and awareness of this topic in the primary care setting. In future practice, providers should take care to deliver patient education that is mindful of both patient and provider time.

References

American Heart Association. (2018). Fact sheet. Cardiovascular disease: Women's no. 1 health

      threat. Retrieved from https://www.heart.org/-/media/files/about-us/policy-research/fact

      -sheets/facts-cvd-womens-no-1-health-

      threat.pdf?la=en&hash=F6AD6FC4FD546ABA0E18D4D6C456C666EE4D5C0F.

Bairey Merz, C. N., Andersen, H., Sprague, E., Burns, A., Keida, M., Walsh, M. N.,

      Greenberger, P., Campbell, S., Pollin, I., McCullough, C., Brown, N., Jenkins, M.,

      Redberg, R., Johnson, P., & Robinson, B. (2017). Knowledge, attitudes, and beliefs

      regarding cardiovascular disease in Women: The women's heart alliance. *Journal of the*

      American College of Cardiology, 70(2), 123. doi:10.1016/j.jacc.2017.05.024

Boone, H., & Boone, D. (2012). Analyzing likert data. *The Journal of Extension, 50*(2).

      Retrieved from https://www.joe.org/joe/2012april/tt2.php

Christian, A. H., Rosamond, W., White, A. R., & Mosca, L. (2007). Nine-year trends and racial

      and ethnic disparities in women's awareness of heart disease and stroke: An American

      Heart Association national study. Journal of Women's Health (15409996), 16(1), 68-81.

      doi:10.1089/jwh.2006.M072

Flink, L. E., Sciacca, R. R., Bier, M. L., Rodriguez, J., & Giardina, E. G. (2013). Women at risk

      for cardiovascular disease lack knowledge of heart attack symptoms. Clinical

      Cardiology, 36(3), 133–138. doi:10.1002/clc.22092

Galbraith, E. M., Mehta, P. K., Veledar, E., Vaccarino, V., & Wenger, N. K. (2011). Women and

      heart disease: Knowledge, worry, and motivation. Journal of Women's Health

      (15409996), 20(10), 1529-1534. doi:10.1089/jwh.2010.2356

Giardina, E. V., Sciacca, R. R., Flink, L. E., Bier, M. L., Paul, T. K., & Moise, N. (2013). Cardiovascular disease knowledge and weight perception among hispanic and non-hispanic white women. *Journal of Women's Health* (15409996), *22*(12), 1009-1015. doi:10.1089/jwh.2013.4440

McLeod, S. (2019). Likert scale definition, examples and analysis. *Simply Psychology*. Retrieved from https://www.simplypsychology.org/likert-scale.html

McKelvie, S. J. (1978). Graphic rating scales — how many categories? *British Journal of Psychology, 69*(2), 185-202. doi:10.1111/j.2044-8295.1978.tb01647.x

Mochari-Greenberger, H., Miller, K. L., & Mosca, L. (2012). Racial/ethnic and age differences in women's awareness of heart disease. Journal of Women's Health (15409996), 21(5), 476-480. doi:10.1089/jwh.2011.3428

Reeder, M. (2017). Cardiovascular disease in african american women: an assessment of awareness. *ABNF Journal, 28*(3), 76-80. Retrieved from http://search.ebscohost.com.proxy.seattleu.edu/login.aspx?direct=true&db=rzh&AN=125076518&site=ehost-live&scope=site

Rycroft-Malone, J. (2004). The PARIHS framework – a framework for guiding the implementation of evidence-based practice. *Journal of Nursing Care Quality, 19*(4), 297-304.

Villablanca, A. C., Beckett, L. A., Li, Y., Leatherwood, S., Gill, S. K., Giardina, E. V., Barron, C., Foody, J. M., Haynes, S., & D'Onofrio, G. (2010). Outcomes of comprehensive heart care programs in high-risk women. *Journal of Women's Health* (15409996), *19*(7), 1313-1325. doi:10.1089/jwh.2009.1426

Villablanca, A. C., Warford, C., & Wheeler, K. (2016a). Inflammation and cardiometabolic risk

    in african american women is reduced by a pilot community-based educational

    intervention. Journal of Women's Health (15409996), 25(2), 188-199.

    doi:10.1089/jwh.2014.5109

Villablanca, A. C., Slee, C., Lianov, L., & Tancredi, D. (2016b). Outcomes of a clinic-based

    educational intervention for cardiovascular disease prevention by race, ethnicity, and

    urban/rural status. *Journal of Women's Health (15409996), 25*(11), 1174-1186.

    doi:10.1089/jwh.2015.5387

Wenger, N. K. (2012). Women and coronary heart disease: A century after herrick:

    Understudied, underdiagnosed, and undertreated. *Circulation, 126*(5), 604-611.

    doi:10.1161/CIRCULATIONAHA.111.086892

PREVENTION OF CARDIOVASCULAR DISEASE IN WOMEN OF COLOR IN THE PRIMARY CARE SETTING

A Toolbox for Providers

Ellerey Nelson, RN, BSN, DNP-FNP Student, Seattle University

COLLEGE OF
NURSING

TABLE OF CONTENTS

WOMEN OF COLOR AND CVD

THE PROBLEM: Women of Color have an increased risk of cardiovascular disease (CVD) paired with a decreased knowledge and understanding of CVD.

- CVD is the #1 killer of American women. (AHA, 2018)

- The prevalence of CVD in White women is 35%, compared to **48% in women of color**. (AHA, 2018)

- African American women have the highest mortality rate from CVD out of any female racial or ethnic group in the U.S. (CDC, n.d.; Villablanca et al., 2010)

- Hispanic women are more likely to have risk factors associated with CVD such as diabetes and obesity (Giardina et al., 2013)

- South Asian persons have an increased risk of morbidity and mortality from ischemic heart disease and have not benefitted from the same decline in cases as the general population over the last few decades (Graham, 2015).

- **Only 36% of Black women and 34% of Hispanic women were able to identify CVD as women's number one cause of death, compared to 65% of White women** in a national survey by the American Heart Association. Read more about the study HERE

- Decreased knowledge and awareness have been associated with decreased strategy to take preventative action against CVD (Christian et al., 2007).

- Physicians are more likely to falsely rate women at lower risk for CVD than men, underutilizing preventative strategies (Bairey Merz, 2017; Wenger, 2012)

THE PURPORSE of this toolbox is to 1) Raise provider awareness on the disparities that exist in CVD risk and knowledge in women of color and 2) Equip providers with a resource to facilitate preventative strategies with patients who are women of color.

3

CVD: A PRIMER

CVD is an umbrella term that includes numerous manifestations of cardiac and vascular disease. There are four diagnostic categories of CVD:

1. Coronary Heart Disease (e.g. MI, Angina Pectoris)
2. Cerebrovascular Disease (e.g. Stroke, TIA)
3. Peripheral Arterial Disease
4. Aortic Atherosclerosis or Aneurysm

Healthy People 2020 has two main objectives related to CVD: 1) To increase the overall cardiovascular health in the U.S. and 2) To reduce the number of coronary heart disease deaths (baseline: 129.2 deaths per 100,000 people; target: 103.4 deaths per 100,000 people).

Risk Factors for CVD can be divided into modifiable and nonmodifiable.

Modifiable risk factors are estimated to be the cause of more than one half of the mortality associated with CVD. The most common include (Hennekens, 2020):

- Hypercholesterolemia
- Diabetes
- Hypertension
- Overweight and Obesity
- Physical Inactivity
- Unhealthy Diet
- Smoking or Tobacco Use
- Metabolic Syndrome

Nonmodifiable Risk Factors
- Family History of CVD, especially premature CVD—age <55 males/<65 females
- Age >65 (compared to >55 in males)
- High Risk Race or Ethnicity
- Low Socioeconomic Status
- Poor Access to Healthcare and Preventative Services
- CKD
- Chronic Inflammatory Conditions

Risk Factors Unique to Women (ACOG, 2016; Douglas & Poppas, 2019).
- Early Menarche
- Use of Combined Oral Contraceptives (COCs)— Although generally safe, they are associated with an increased risk of heart attack or stroke in women with

4

multiple risk factors for or known atherosclerotic cardiovascular disease (ASCVD).
- Polycystic Ovarian Syndrome (PCOS)
- Pregnancy Complications, including gestational hypertension or preeclampsia and gestational diabetes
- Postmenopausal State and Early Menopause (age <40)
  - Menopause transition is associated with increased risk (Heart, 2010)
  - It is notable that hormone replacement therapy (HRT) was not demonstrated to be cardioprotective in the WHI and HERS trials
- HRT—combined hormone therapy presents a small increase in risk of heart attack and stroke
- Autoimmune Disorders—lupus and rheumatoid arthritis are more common in women and are associated with increased risk of CVD
- Lipoproteins—low HDL, rather than high LDL, is more predicative of risk in women

Risk Factors by Race & Ethnicity

Disease Risk and Risk Factors Amongst Different Ethnic and Racial Groups (Graham, 2015).
Read the full report HERE

	Black/African American	Asian American/Pacific Islander	Non-White Hispanic
Disease Impact	• 30% more likely to die from heart disease • Twice as likely to have a stroke • Higher rate of MI • Higher rate of heart failure • Higher functional impairment from ACS • Higher death rate from ACS	• Coronary artery disease occurs earlier in life and in a higher percentage of the population in Asian Indians than in other ethnic groups	• Lower rates of overall CVD • Puerto Rican Americans have the highest HTN related death rates of all Hispanic subgroups. • Rate of heart failure for Hispanics is lower than for African Americans, but higher than for non-Hispanic whites
Risk Factors	• 40% more likely to have high blood pressure • 10% less likely than their white counterparts to have their blood pressure under control. • Twice as likely to be diagnosed with Diabetes • Higher rate of PVD • Higher rate of Obesity	• Lipoprotein levels are higher in Indians than any other ethnic group • South Asians have more nontraditional CVD risk factors, including differences in inflammatory markers as well as insulin resistance • South Asians were less likely to undergo systematic screening than white males • Korean Americans, Vietnamese Americans and Filipino American males have some of the highest smoking rates	• Awareness that heart disease is the leading cause of death was lowest for Latino women • Mexican Americans have a higher prevalence of HTN • Higher BMI and waist circumference among Mexican Americans • Mexican Americans and Puerto Ricans have twice the rate of DM compared to non-Hispanic whites • Higher rate of triglycerides • Lower rates of CAC • Mexican Americans have the highest rate of age-adjusted prevalence of metabolic syndrome compared to other race/ethnic groups
What to Do	• Improved awareness and better HTN control • Increased awareness of stroke symptoms • Improved access to appropriate intervention. • Tailored drug treatment for heart failure	• Earlier screening for heart disease • Emerging factors such as genetic polymorphism and dysfunctional high-density lipoprotein (HDL) in assessing risk factors	• Increased awareness around risk factors • Improved targeted strategies around diabetes control

5

Men vs. Women

The risk of CVD is often underestimated in women by both patients and providers. **Under-recognition and variable clinical presentation** are related to **less aggressive treatment strategies.** Women, especially women of color, are also **underrepresented** in clinical trials (Heart, 2010). Additionally, physicians are less likely to discuss risk and provide preventative care to women than men (American College of Cardiology, 2019).

Men and women may experience different anginal symptoms. Therefore, it is crucial to educate patients on this matter so that they can identify signs and symptoms of a heart attack and when to take emergency action. While chest pain is the most common anginal symptom in both men and women, women are more likely to experience other symptoms including **nausea, shortness of breath, back or jaw pain, or lightheadedness**.

Women of Color

Overall, people of color have an increased risk of morbidity and mortality due to CVD and have not benefited to the same extent from the general decline in heart disease related deaths in the U.S. over the last few decades (Graham, 2015). **Women of color demonstrate a higher mortality rate** from CVD than White women. In particular, African American women have a higher death rate from CVD compared to White females and mortality is more likely to occur at a younger age (CDC, n.d.; Graham, 2015). Black and Hispanic women have the highest rates of obesity, hypertension and diabetes in the U.S., contributing to increased risk.

There also exists a **knowledge gap** in women of color on awareness of heart disease as women's number one health threat (American Heart Association, 2018; Reeder, 2017; Villablanca et al., 2016). This is significant because decreased knowledge and awareness have been associated with decreased strategy to take preventative action against CVD (Christian et al., 2007).

HEALTH INDICATORS

National

Heart disease, which is responsible for 22.3% of deaths in women nationally, is the leading cause of death in women in the United States and coronary artery disease is the most common form (CDC, 2020). Black women in the United States exhibit the highest rates of both hospitalization and death from CVD nationwide (CDC, n.d.; CDC, 2020).

National CVD Hospitalization Rate per 1,000 Medicare Beneficiaries, Women Age 65+, 2015-2017

All Races/Ethnicities	53.3
Black	79
White	51.5
Hispanic	49.5

(CDC, n.d.)

National CVD Death rate per 100,000, Women, All Ages, 2016-2018

All Races/Ethnicities	179.6
American Indian/Alaskan Native	158.9
Asian and Pacific Islander	108
Non-Hispanic Black	238.6
Hispanic	131.4
Non-Hispanic White	180.8

(CDC, n.d.)

Check out the CDC's Interactive Atlas of Heart Disease and Stroke to compare CVD hospitalization and death rates by race/ethnicity, gender and geographical location.

Local

In Washington State, CVD is the second leading cause of death in women after cancer, compared to the leading cause nationally (Washington State Department of Health, 2017). In Washington state, Black women have the highest hospitalization rate. However, American Indian and Alaskan Native women have the highest death rate, followed by Black women and then White women. Hispanic women have a higher hospitalization rate than White women, however, their death rate is lower.

Washington State CVD Hospitalization Rate per 1,000 Medicare Beneficiaries, Women Age 65+, 2015-2017*

All Races/Ethnicities	42.2
Black	64.7
White	42.1
Hispanic	46

(CDC, n.d.)

National Rate: 53.3

Washington State CVD Death rate per 100,000, Women, All Ages, 2016-2018*
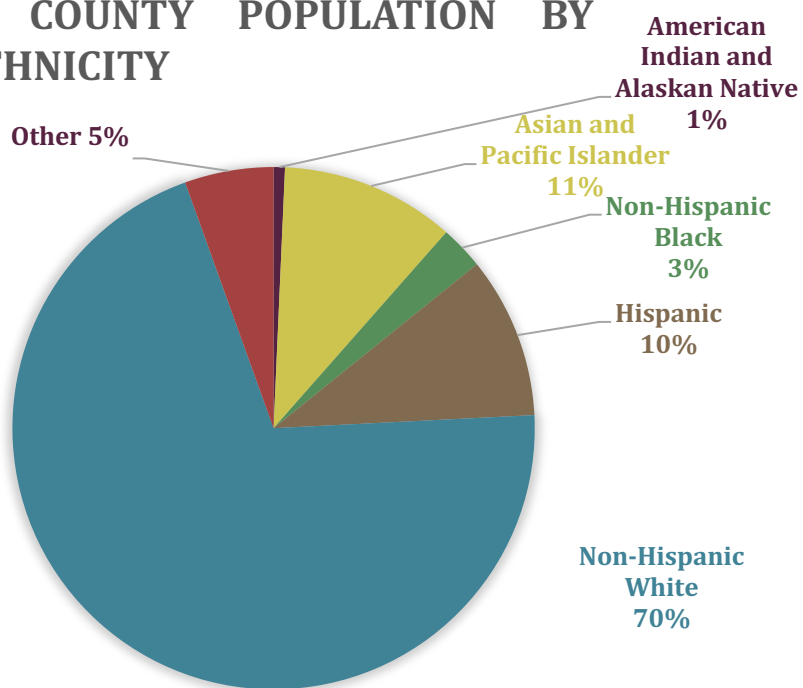
All Races/Ethnicities	152
American Indian/Alaskan Native	195.6
Asian and Pacific Islander	104.1
Non-Hispanic Black	187
Hispanic	111.1
Non-Hispanic White	155.8

(CDC, n.d.)

National Rate: 179.6

In Snohomish County, CVD is also the second leading cause of death after cancer (Washington State Department of Health, 2017). Black women are disproportionately affected by CVD. Hospitalizations in Black women are above both the state and national rate and deaths in Black women are above the state rate. Additionally, American Indian and Alaskan Native women demonstrate a death rate that exceeds both the state and national rate (CDC, n.d.).

7

SNOHOMISH COUNTY POPULATION BY RACE AND ETHNICITY

Other 5%

American Indian and Alaskan Native 1%

Asian and Pacific Islander 11%

Non-Hispanic Black 3%

Hispanic 10%

Non-Hispanic White 70%

(CDC, n.d.)

Snohomish County CVD Hospitalization rate per 1,000 Medicare beneficiaries, Women, Age 65+ 2015-2017*

All Races/Ethnicities	42.3
Non-Hispanic Black	60.3
Non-Hispanic White	43.3
Hispanic	Insufficient data

(CDC, n.d.)

National Rate: 53.3, State Rate: 42.2

Snohomish County CVD Death rate per 100,000, Women, All Ages, 2016-2018*

All Races/Ethnicities	145.1
American Indian/Alaskan Native	188.7
Asian and Pacific Islander	91.9
Non-Hispanic Black	173.7
Hispanic	95.8
Non-Hispanic White	149.6

(CDC, n.d.)

*National Rate: 179.6, State Rate: 152*

8

CURRENT PRACTICE GUIDELINES

Top 10 Takeaways from the 2019 ACC/AHA Guidelines on the Primary Prevention of Cardiovascular Disease:

1. The most important way to prevent ASCVD, heart failure and atrial fibrillation is through promotion of a healthy lifestyle across the lifespan.

2. A team-based care approach is an effective strategy for the prevention of cardiovascular disease. Clinicians should evaluate the social determinants of health that affect individuals to inform treatment decisions.

3. Adults who are 40 to 75 years of age and are being evaluated for cardiovascular disease prevention should undergo 10-year atherosclerotic cardiovascular disease (ASCVD) risk estimation and have a clinician–patient risk discussion before starting on pharmacological therapy, such as antihypertensive therapy, a statin, or aspirin. In addition, assessing for other risk-enhancing factors can help guide decisions about preventive interventions in select individuals, as can coronary artery calcium scanning.

4. All adults should consume a healthy diet that emphasizes the intake of vegetables, fruits, nuts, whole grains, lean vegetable or animal protein, and fish and minimizes the intake of trans fats, red meat and processed red meats, refined carbohydrates, and sweetened beverages. For adults with overweight and obesity, counseling and caloric restriction are recommended for achieving and maintaining weight loss.

5. Adults should engage in at least 150 minutes per week of accumulated moderate-intensity physical activity or 75 minutes per week of vigorous-intensity physical activity.

6. For adults with type 2 diabetes mellitus, lifestyle changes, such as improving dietary habits and achieving exercise recommendations, are crucial. If medication is indicated, metformin is first-line therapy, followed by consideration of a sodium-glucose cotransporter 2 inhibitor or a glucagon-like peptide-1 receptor agonist.

7. All adults should be assessed at every healthcare visit for tobacco use, and those who use tobacco should be assisted and strongly advised to quit

8. Aspirin should be used infrequently in the routine primary prevention of ASCVD because of lack of net benefit.

9. Statin therapy is first-line treatment for primary prevention of ASCVD in patients with elevated low- density lipoprotein cholesterol levels (>/=190 mg/dL), those with diabetes mellitus, who are 40 to 75 years of age, and those determined to be at sufficient ASCVD risk after a clinician–patient risk discussion

10. Nonpharmacological interventions are recommended for all adults with elevated blood pressure or hyper- tension. For those requiring pharmacological therapy, the target blood pressure should generally be <130/80 mm Hg

Read the full report HERE

ABCDE of Primary Prevention: Lifestyle Changes and Team-Based Care
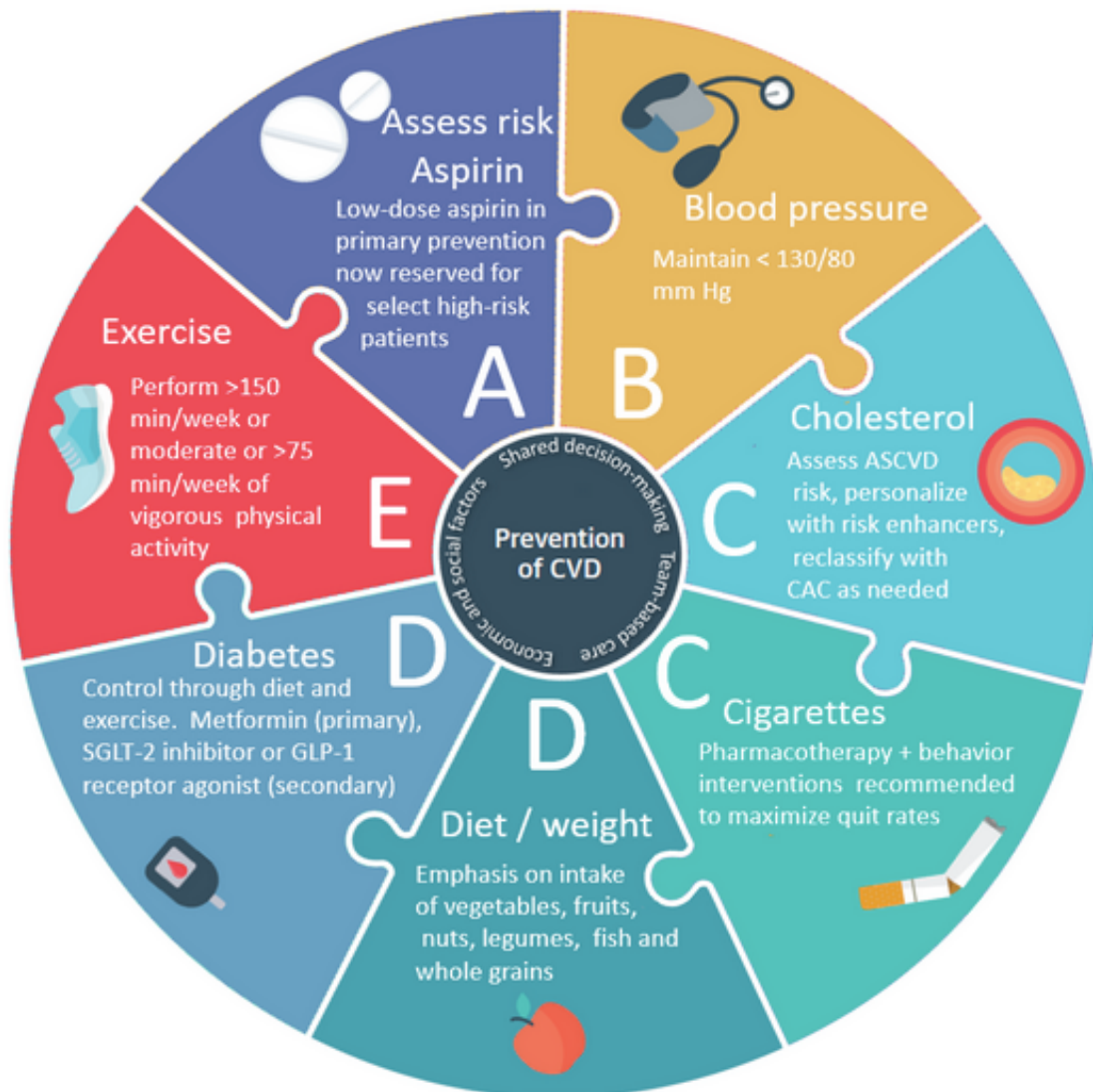
The ABCs of Primary Cardiovascular Prevention: 2019 Update.
(Alfaddagh, Arps, Blumenthal & Martin, 2019)

Aspirin

Aspirin is no longer recommended as pharmacologic treatment for the primary prevention of ASCVD due to lack of net benefit. However, it is still recommended as secondary prevention. Primary prevention with low-dose aspirin may be considered in select patients who have high-risk for ASCVD* and are not an increased risk for bleeding (Rubenfire, 2019).

*See ASCVD risk below

Blood Pressure

ACC/AHA 2017 Classification for Hypertension: (Rubenfire, 2019).

Blood Pressure	Systolic	Diastolic
Normal	<120	<80
Elevated	120-129	<80
Stage 1	130-139	80-89
Stage 2	≥140	≥90

ACC/AHA 2017 vs. JNC 8: When to Start Pharmacotherapy

ACC/AHA		JNC 8	
Patients w/o CVD and 10-year risk <10%	At 140/90	Patients ages <60	At 140/90
Patients w/ CVD or 10-year risk >/=10%	At 130/80	Patients ages 60+	At 150/90
Patients ages 65+	SBP ≥130	Patients w/ diabetes	At 140/90
Patients w/ Diabetes	At 130/80	Patients w/ CKD	At 140/90
Patients w/ CKD	At 130/80		

ACC/AHA 2017 vs. JNC 8: Blood Pressure Goals in Patients with Hypertension

ACC/AHA*		JNC 8	
Most Patients	<130/80	Patients ages <60	<140/90
Patients ages 65+**	SBP <130	Patients ages 60+***	<150/90
Post stroke or TIA *w/o* previously treated HTN	<130/80	Patients w/ Diabetes	<140/90
Post stroke or TIA *w/* previously treated HTN	<140/90	Patients w/ CKD	<140/90

(Hernandez-Villa, 2015; Ripley & Barbato, 2018)

*Lower goals influenced by the results of the SPRINT Trial.
**Consider risk for falls, dementia or Parkinson's, orthostasis, other comorbidities and limited life expectancy.
***No need to back off treatment if SBP of <140 is achieved and treatment is well tolerated.

Pharmacologic Implications:

According to both the ACC/AHA and JNC 8 guidelines, race should be considered when initiating pharmacologic therapy, specifically in Black patients.

The **ACC/AHA** recommends the use of **thiazide diuretics or calcium-channel blockers** as first line treatment in the management of hypertension in Black patients, including those with diabetes. (Carey, Whelton, & 2017 ACC/AHA Hypertension Guideline Writing Committee, 2018).

12

The **JNC 8** also recommends the use of a thiazide **diuretic or a calcium-channel blocker** for the initial treatment of hypertension in the Black population (general Black population- moderate, grade B recommendation; Black with diabetes- weak, grade C recommendation). These findings are based on results from the ALLHAT trial which demonstrated better cardiovascular outcomes in Black patients than when using ACE-Inhibitors. ACE-Inhibitors were also found to be less effective in lowering blood pressure as opposed to calcium-channel blockers in the black population. (James et al., 2014).

Cholesterol: ASCVD Risk & Statin Recommendations

ASCVD Risk Calculator

Risk calculators provide a frame of reference for risk in patients *without* ASCVD using population-based and clinical trial outcomes with the goal of matching need for and intensity of preventative therapies to absolute risk of an ASCVD event in the next 10 years (ACC/AHA, 2019). It is recommended that patients ages 20 and older without established ASCVD should undergo periodic risk assessment every three to five years (Douglas & Poppas, 2019).

Calculate HERE

However, it is essential that providers recognize that risk calculators **do not consider all risk factors contributing to higher risk**, such as **low socioeconomic status** (SES), **race** and **risk factors unique to women**. In fact, the risk calculator is best validated among non-Hispanic Whites and non-Hispanic Blacks. This may inaccurately assess risk in patients of other races and ethnicities who are known to be at greater risk, including Latinx and South Asian ancestry (Rubenfire, 2019).

Additional Considerations from the ACC/AHA 2019 Guidelines on the Primary Prevention of CVD: (ACC/AHA, 2019)
- No single risk calculator is effective for all patients
- Risk may be underestimated in patients with chronic inflammatory conditions (e.g. autoimmune conditions) or HIV/AIDS and **low SES**. Patients with familial hypercholesterolemia are also at increased risk not captured in risk calculators.
- Risk may be overestimated in patients with higher SES and those with continual access to care and preventative services.
- Thus, in patients who score borderline (5% to <7.5%) or intermediate (>/=7.5% to <20%), additional risk-enhancing clinical factors should be considered:
    - Family History of Premature ASCVD
    - Primary Hypercholesterolemia
    - Metabolic Syndrome
    - Chronic Kidney Disease
    - Chronic Inflammatory Conditions
    - **Conditions Specific to Women**
        - Early menarche, early menopause, pregnancy complications, PCOS, HRT
    - **High Risk Race/Ethnicity**
    - Lipids & Biomarkers Associated with Increased ASCVD Risk:

13

- Persistent hypertriglyceridemia (≥ 175)
- Elevated High-Sensitivity C-Reactive Protein (≥2 mg/dL)
- Elevated Lp(a) levels (≥50 mg/dL or ≥125 nmol/L)
- Elevated ApoB levels ≥ 130 mg/dL
- ABI >0.9

Statin Recommendations

From the 2019 ACC/AHA Guideline on the Primary Prevention of CVD: (Rubenfire, 2019)

- Patients ages **20-75 years and LDL-C ≥190 mg/dl**: Use a high-intensity statin without risk assessment.
- Patients ages **40-75 and Type 2 Diabetes**: Use a moderate-intensity statin and risk estimation to consider a high-intensity statin. Risk-enhancers in diabetics include ≥10 years for T2DM and 20 years for type 1 DM, ≥30 mcg albumin/mg creatinine, eGFR <60 ml/min/1.73 m^2, retinopathy, neuropathy, ABI <0.9. In those with multiple ASCVD risk factors, consider high-intensity statin with aim of lowering LDL-C by 50% or more.
- Patients ages **>75 years**: Clinical assessment and risk discussion.
- Patients ages 4**0-75 years and LDL-C ≥70 mg/dl and <190 mg/dl** *without diabetes*: Use the risk estimator that best fits the patient and risk-enhancing factors to decide the intensity of statin needed.
  - Borderline Risk (5% to <7.5%): Risk discussion-- if risk-enhancing factors are present, discuss moderate-intensity statin and consider coronary CACs in select cases.
  - Intermediate Risk (≥7.5-20%): Risk discussion-- use moderate-intensity statins and increase to high-intensity with risk enhancers. Option of CACs to risk stratify if there is uncertainty about risk. If CAC = 0, can avoid statins and repeat CAC in the future (5-10 years), the exceptions being high-risk conditions such as diabetes, family history of premature CHD, and smoking. If CACs 1-100, it is reasonable to initiate moderate-intensity statin for persons ≥55 years. If CAC >100 or 75th percentile or higher, use statin at any age.
  - High Risk (≥20%): Risk discussion to initiate high-intensity statin to reduce LDL-C by ≥50%.

Tobacco

Both tobacco use (including secondhand smoke) and smokeless tobacco are associated with increased ASCVD risk. It is estimated that 1/3 of CHD deaths are attributed to tobacco use. E-cigarettes are a tobacco delivery device that is growing in popularity, especially amongst youth and young adults. Because they are fairly new products, the long-term health risks are not certain. However, current research suggests that they contribute to cardiac and pulmonary disease. Case reports have also shown arrythmias and hypertension associated with e-cigarette use. All adults should be assessed for tobacco use at each visit and counseled on cessation if appropriate. Treatments include behavioral modification, nicotine replacement therapy or drug treatment with varenicline or bupropion (Rubenfire, 2019).

14

		Patch	If >10 cigarettes/day use 21 mg If <10 cigarettes/day use 14 mg or 7 mg
Nicotine replacement therapy		Gum	2 mg or 4 mg (start with 4mg if first tobacco is ≤30 min from waking); max is 20 lozenges or 24 pieces of gum per day
		Lozenge	
		Nasal spray	10 mg/mL
		Oral inhaler	10 10-mg cartridge (max 6-16 cartridges/day)
Other pharmacotherapies		Bupropion	150 mg SR daily (up to twice daily)
		Varenicline	0.5 mg daily titrated to 1 mg twice daily

The ABCs of Primary Cardiovascular Prevention: 2019 Update.
(Alfaddagh, Arps, Blumenthal & Martin, 2019).

Diabetes

The development and progression of type 2 diabetes mellitus is heavily influenced by diet, physical activity, and body weight. The ACC/AHA recommends dietary counseling for a heart-healthy diet that lowers CVD events and CVD mortality, including the Mediterranean, DASH, and vegetarian/vegan diets in order to aid weight loss and glycemic control. It is estimated that at least 150 minutes/week of moderate to vigorous physical activity can lower HbA1c by 0.7%. The recommended first-line therapy in the treatment of diabetes to reduce CVD risk is metformin with a goal HbA1c of 6.5-7%. In comparison to lifestyle modifications, metformin has been shown to reduce micro- and macrovascular diabetes-related complications by 32% and reduce MIs by 39%. Other popular medications used for glycemic control, including sulfonylureas, do not demonstrate a reduction in ASCVD risk. However, SGLT-2 inhibitors and GLP-1R agonists have been shown to reduce ASCVD events and may be an appropriate addition to metformin for the prevention of ASCVD (Rubenfire, 2019).

Diet, Weight & Exercise

Dietary habits associated with increased risk of CVD mortality include sugar, low-calorie sweeteners, high-carbohydrate diets, low-carbohydrate diets, refined grains, trans fat, saturated fat, sodium, red meat, and processed red meat (e.g. bacon, salami, ham, etc). A plant-based diet or Mediterranean-like diet is associated with a decrease in ASCVD and all-cause mortality. The ACC/AHA recommendation is for a diet high in vegetables, fruits, nuts, whole grains, lean vegetable or animal protein (preferably fish), and vegetable fiber. Diets focused on low carbohydrate intake and high intake of animal

15

fat and protein are associated with increased cardiac and non-cardiac mortality (Rubenfire, 2019).

A diagnosis of obesity can be made by a BMI ≥ 30 kg/m^2 and a diagnosis of overweight by a BMI of 25-29.9 kg/m^2. The ACC/AHA recommendation is for a low-calorie diet (500 calorie reduction) and high levels of physical activity (200-300 minutes/week). Clinically meaningful weight loss is defined as $\geq 5\%$ initial weight and is associated with improvement in blood pressure, LDL-C, triglyceride, and glucose levels among obese or overweight individuals, and delays the development of type 2 diabetes mellitus (Rubenfire, 2019).

Adequate aerobic exercise is associated with decreased risk of ASCVD. The current recommendation from the ACC/AHA is for 150 minutes/week of moderate intensity or 75 minutes/week vigorous intensity physical activity (Rubenfire, 2019).

PATIENT EDUCATION

Health care providers should partner with patients who are women of color to empower them in doing their part to reduce the risk of cardiovascular disease. Here are some important education points and resources for reducing the risk and **increasing knowledge and awareness** in this patient population.

Signs & Symptoms of Heart Attack Unique to Women
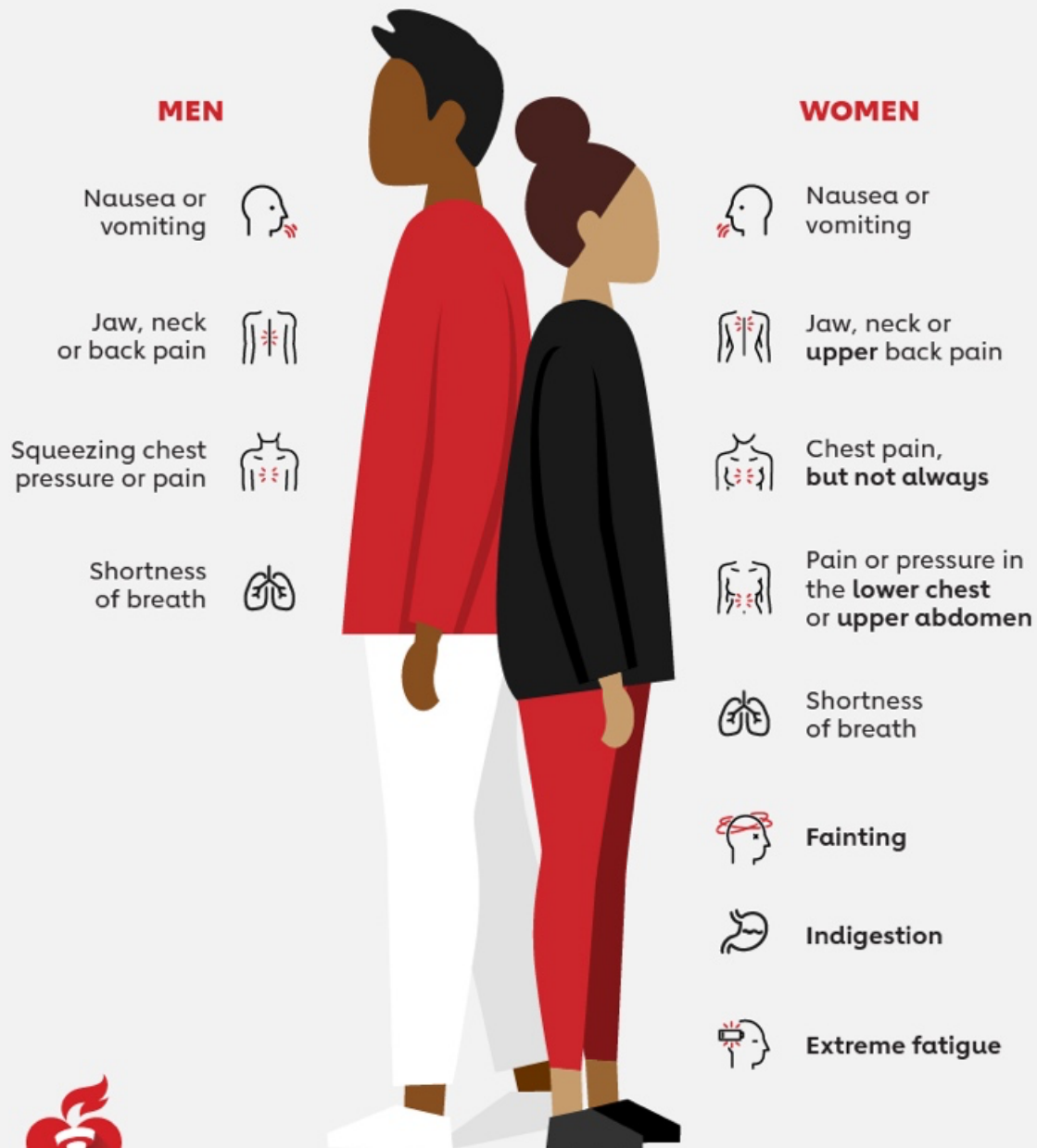Emphasize that women are more likely than men to experience anginal symptoms other than chest pain. Women are less likely to realize they are having a heart attack and therefore delay seeking care. Providers should educate women on the warning signs that they may be having a heart attack, including:
- Chest Tightness or Pressure
- Diaphoresis
- Shortness of Breath
- Fatigue or Lightheadedness
- Back, Neck or Jaw Pain
- Nausea

HEART ATTACK SYMPTOMS:
MEN VS. WOMEN

By American Heart Association News

The most common symptom of a heart attack for both men and women is chest pain. But women may experience less obvious warning signs.

MEN

- Nausea or vomiting
- Jaw, neck or back pain
- Squeezing chest pressure or pain
- Shortness of breath

WOMEN

- Nausea or vomiting
- Jaw, neck or **upper** back pain
- Chest pain, **but not always**
- Pain or pressure in the **lower chest** or **upper abdomen**
- Shortness of breath
- Fainting
- Indigestion
- Extreme fatigue

Source: American Heart Association's journal, Circulation
Published April 4, 2019 | © 2019 American Heart Association, Inc.

Image: https://health.clevelandclinic.org/how-to-protect-yourself-against-heart-and-vascular-disease/

17

Women of Color: Increasing Knowledge and Awareness

The current literature reveals that women of color have a decreased knowledge and awareness of heart disease. Talk with your patients, especially women of color, about heart disease as women's number one health threat.

> Here is some helpful information for patients on **CVD as women's number one health threat** and how it **disproportionately affects women of color** in the United States: Cardiovascular Disease: Women's #1 Health Threat (American Heart Association, 2018)

In addition to heart attack signs and symptoms unique to women, **women of color should be aware of varying presentation impacted by race and ethnicity**. A literature review by the American Heart Association (Graham et al., 2012) found that patients of racial and ethnic minorities presenting with CHD were more likely to be **younger**, be **female** and have other **comorbidities** such as diabetes, hypertension and obesity. Other key findings highlighted in this review include:

- In a study of elderly Black women with CHD, patients were more likely to experience unusual fatigue and sleep disturbance as prodromal symptoms, with less than half experiencing chest pain or discomfort.
- The most acute symptom in women of racial or ethnic minorities was found to be shortness of breath.
- In Hispanics undergoing coronary artery bypass graft surgery, patients are more likely to have more comorbidities, be female, be younger and have a lower BMI than others
- Chinese, South Asian and Southeast Asian patients were more likely to experience typical prodromal symptoms (i.e. chest pain or discomfort), however, were more likely to delay time to seeking emergency care.

Read the review HERE

Modifiable Risk Factors

Educate your patients on everyday things they can do to actively take part in reducing their risk of cardiovascular disease.

- Talk about a **heart healthy diet**
- Counsel on **weight loss** if appropriate
- Encourage regular aerobic **exercise**
- Counsel on **smoking and tobacco cessation** if appropriate
- Brainstorm ways to manage **stress**

(Image: https://www.everydayhealth.com/hs/type-2-diabetes/heart-disease-risk-factors/)

18
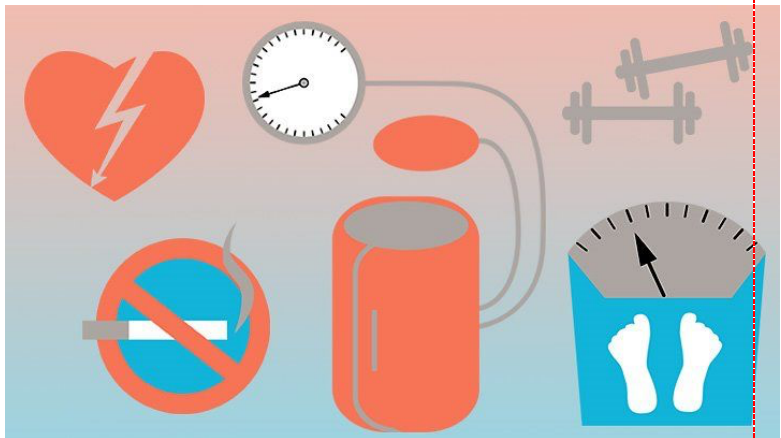
African Americans have the highest incidence of hypertension in both men and women in the world. Emphasize that hypertension, often called **"this silent killer"**, usually does not have any symptoms until the damage has already been done.

Point out measures that patients can take on a day-to-day basis to help lower blood pressure
- Eating a healthy diet, low in sodium—educate patients on reading nutrition labels and foods high in sodium (e.g. processed and packaged foods)
- Engaging in regular physical activity
- Maintaining a healthy weight
- Manage stress
- Limit alcohol intake
- Discuss medications, both OTC and prescription, used—many OTC medications, including commonly used decongestants and NSAIDs, can elevate blood pressure

Patient blood pressure logs provided by the Washington State Department of Health—print and review with your patient at their next visit. (Washington State Department of Health, n.d.)

> English
> Spanish

How to check your blood pressure manually from the Washington State Department of Health (Washington State Department of Health, n.d.)

> English
> Spanish

HERE is a link to the main page with more **languages** and additional resources for patients on monitoring their own blood pressure at home

CULTURAL CONSIDERATIONS

Culture & CVD Risk
Cultural beliefs and values influence patient's understanding of health and illness. In fact, culture has been shown to have a greater impact on CVD risk and outcomes than genetics do (Graham et al., 2012). When partnering with patients to reduce risk, it is essential to assess how culture influences patient's perceptions of CVD in order to promote meaningful change. However, limited studies exist on culture as it relates to women of color's perceptions of heart health.

State of the Science—Selected Literature
- A systematic review found that cultural beliefs surrounding health and illness contribute to the patient's ability to understand and act on information and

19

instructions given by healthcare providers, indicating a need for provider assessment of cultural and language barriers and healthy literacy. (Shaw et al., 2008)

- A systematic review exploring how culture influences understanding of advanced heart failure found that symptoms were strongly related to cultural beliefs. Patients from Eastern and Middle Eastern cultures were found to somaticize symptoms more than patients of Western cultures. However, patients of Western cultures reported higher symptoms distress. Cultural beliefs impacted knowledge of heart failure diagnosis, cause, treatment, self-management and decisions about care and health behaviors. (Alassoud et al., 2020)

- A qualitative study revealed that African Americans were less likely to associate overweight and obesity and risk factors for CVD than other traditional risk factors (e.g. physical inactivity, poor diet, etc.). Participants of this study reported that they were open to modifying health behaviors if changes incorporated their input and were culturally acceptable. (Der Ananian et al., 2018)

- A mixed-methods study found that women of color, including Black, Latina and Asian American women, based their perceptions of CVD on past familial and cultural experiences, personal loss, personal sense of empowerment and complicated relationships with physicians. (Tindall & Vardeman-Winter, 2011)

Assessing Your Patient's Perception of Risk as it Relates to Culture

(Image: https://www.meadowsranch.com/how-body-diversity-can-help-women-build-a-positive-body-image/)

Assess cultural perceptions about **body image**—does the patient view themselves as overweight/obese or culturally normal? What does you patient and their culture view as overweight? (American Heart Association, 2019).

Assess cultural beliefs about **exercise**—how useful is exercise for preventing disease? Are there cultural restrictions on the type and setting in which exercise may occur? (Chyun et al., 2003)

Assess cultural beliefs about **diet**—what is this culture's eating habits and dietary practices? What does the patient think is a healthy diet? What foods are important to their culture? (Chyun et al., 2003)

Assess beliefs about **smoking**-- Is smoking or tobacco use a cultural norm? Are there cultural barriers to cessation? (Chyun et al., 2003)

Assess cultural perceptions of **stress**—how does the patient and their culture perceive stress? What are stressors for this population? Does racism or discrimination contribute to stress for this patient or her culture? (Shaw et al., 2008)

(Image: https://www.nursingcenter.com/ncblog/november-2019/social-determinants-of-health)
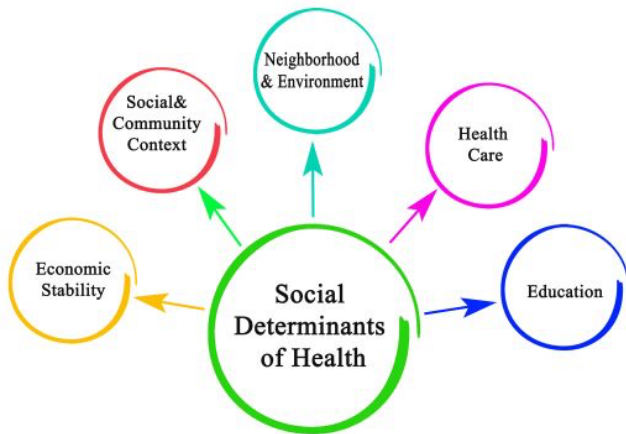
Social Determinants of Health & Barriers

Socioeconomic inequalities are known determinants of cardiovascular health. It is recommended that providers consider social determinants of health when counseling patients on risk factor reduction strategies (American Heart Association, 2019).

The main categories of social determinants of health, often intertwined, include: (Havranek et al., 2015)

- Socioeconomic Position
- **Race and Ethnicity**
- Social Support
- **Culture and Language**
- Access to Care
- Residential Environment

Consider:

Access— healthy foods, health care, financial resources, transportation to appointments

Neighborhood Safety—may impact likelihood of engaging in physical activity

Education and Language Barriers— this can heavily impact **health literacy**, *the ability to understand or act on medical or therapeutic instructions*.

Cultural Norms—how does culture impact perception of risk?

Family Support—does this patient have an adequate support system in place to achieve health related goals?

In sum, women of color are at an increased risk for CVD and decreased knowledge and awareness are doing them a disservice. I hope that you will use this toolbox as a resource and take special care to inform this patient population on heart disease and partner with them to reduce risk.

21

References

Alassoud, B., Johnston, B., & Hogg, K. (2020). Culture and the understanding of

advanced heart failure: A mixed-methods systematic review. *Collegian: Journal*

of the Royal College of Nursing, Australia., 27(4), 459-470.

Alfaddagh, A., Arps, K., Blumenthal, R., & Martin, S.S. (2019). The ABCs of primary

cardiovascular prevention: 2019 update. *American College of Cardiology*.

Retrieved from https://www.acc.org/latest-in-

cardiology/articles/2019/03/21/14/39/abcs-of-primary-cv-prevention-2019-

update-gl-prevention

American College of Cardiology. (2019). One size does not fit all: the role of sex,

gender, race and ethnicity in cardiovascular medicine. *Cardiology Magazine*.

Retrieved from https://www.acc.org/latest-in-

cardiology/articles/2018/10/14/12/42/cover-story-one-size-does-not-fit-all-sex

-gender-race-and-ethnicity-in-cardiovascular-medicine

American College of Cardiology/American Heart Association. (2019). 2019 ACC/AHA

Guideline on the primary prevention of cardiovascular disease. *Journal of the*

American College of Cardiology,74(10).

American College of Gynecology and Obstetrics. (2016). Heart health for women

frequently asked questions: women's health. Retrieved from

https://www.acog.org/patient-resources/faqs/womens-health/heart-health-for

-women

American Heart Association. (2018). Fact sheet. Cardiovascular disease: Women's no. 1

health threat. Retrieved from https://www.heart.org/-/media/files/about-

22

us/policy-research/fact-sheets/facts-cvd-womens-no-1-health-threat.pdf?la=en&hash=F6AD6FC4FD546ABA0E18D4D6C456C666EE4D5C0

American Heart Association. (2019). Environment, culture, other social determinants play big role in heart health. *American Heart Association News*. Retrieved from https://www.heart.org/en/news/2019/03/21/environment-culture-other-social-determinants-play-big-role-in-heart-health

Carey, R. M., Whelton, P. K., & 2017 ACC/AHA Hypertension Guideline Writing Committee (2018). Prevention, detection, dvaluation, and management of high blood pressure in adults: synopsis of the 2017 american college of cardiology/american heart association hypertension guideline. *Annals of Internal Medicine*, *168*(5), 351–358. https://doi.org/10.7326/M17-3203

Centers for Disease Control [CDC]. (n.d.). Interactive atlas of heart disease and stroke tables. Retrieved from https://nccd.cdc.gov/DHDSPAtlas/Reports.aspx

Centers for Disease Control [CDC]. (2020). Heart disease facts. Retrieved from https://www.cdc.gov/heartdisease/facts.htm

Christian, A. H., Rosamond, W., White, A. R., & Mosca, L. (2007). Nine-year trends and racial and ethnic disparities in women's awareness of heart disease and stroke: An American Heart Association national study. Journal of Women's Health (15409996), 16(1), 68-81. doi:10.1089/jwh.2006.M072

Chyun, D.A., Amend, A.M., Newlin, K., Langerman, S., & Melkus, G.D. (2003). Coronary heart disease prevention and lifestyle interventions: cultural influences. *Journal of Cardiovascular Nursing*, *18*(4), 302–318. https://doi-org.proxy.seattleu.edu/10.1097/00005082-200309000-00009

23

Der Ananian, C., Winham, D. M., Thompson, S. V., & Tisue, M. E. (2018). Perceptions

      of heart-healthy behaviors among african american adults: a mixed methods

      study. *International journal of environmental research and public health*,

      15(11), 2433. https://doi.org/10.3390/ijerph15112433

Douglas, P.S., & Poppas, A. (2019). Overview of cardiovascular risk factors in women.

      UpToDate. Retrieved from https://www.uptodate.com/contents/overview-of-

      cardiovascular-risk-factors-in-

      women?search=cardiovascular%20disease%20nonmodifiable%20risk%20factors

      &source=search_result&selectedTitle=4~150&usage_type=default&display_ran

      k=4#H1

Graham, G. (2015). Disparities in cardiovascular disease risk in the United States.

      Current cardiology reviews, *11*(3), 238–245.

      https://doi.org/10.2174/1573403x11666141122220003

Graham, G., Yancy, C., Boehm, A., & Wendt, M. (2012). Cardiovascular care in an

      increasingly diverse community. *Circulation, 125*(8), 1037–1042.

      https://doi.org/10.1161/CIRCULATIONAHA.109.898734

Havranek, E.P., Mujahid, M.S., Barr, D.A., Blair, I.V., Cohen, M.S., Cruz-Flores,

      S.,…Yancy, C.W. (2015). Social determinants of risk and outcomes for

      cardiovascular disease: a scientific statement from the american heart

      association. Retrieved from

      https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2

      ahUKEwiOnIPfjK3rAhXjLX0KHYfhAzEQFjAMegQIAhAB&url=https%3A%2

      F%2Fwww.ahajournals.org%2Fdoi%2Fpdf%2F10.1161%2FCIR.000000000000

      0228&usg=AOvVaw1PIywpo7EuglA0CJFs3JYR

24

Hennekens, C.H. (2020). Overview of primary prevention of cardiovascular disease.

     UpToDate. Retrieved from https://www.uptodate.com/contents/overview-of

     -primary-prevention-of-cardiovascular-

     disease?search=cardiovascular%20disease&source=search_result&selectedTitle=

     5~150&usage_type=default&display_rank=5

Hernandez-Vila E. (2015). A review of the JNC 8 blood pressure guideline. *Texas Heart*

     Institute Journal, *42*(3), 226–228. https://doi.org/10.14503/THIJ-15-5067

James, P.A., Oparil, S., Carter, B.L., et al. (2014). Evidence-based fuideline for the

     management of high blood pressure in adults: report from the panel members

     appointed to the eighth joint national committee (JNC 8). *JAMA*.

     2014;311(5):507–520. doi:10.1001/jama.2013.284427

Maas, A. H., & Appelman, Y. E. (2010). Gender differences in coronary heart disease.

     Netherlands heart journal: monthly journal of the Netherlands Society of

     Cardiology and the Netherlands Heart Foundation, *18*(12), 598–602.

     https://doi.org/10.1007/s12471-010-0841-y

Ripley, T. & Barbato, A. (2018). Hypertension. *American College of Clinical Pharmacy,*

     PSAP 2019, Book 1. Retrieved from

     https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2

     ahUKEwiSl9esha3rAhXDqZ4KHZfiBzoQFjACegQIBBAB&url=https%3A%2F

     %2Fwww.accp.com%2Fdocs%2Fbookstore%2Fpsap%2Fp2019b1_sample.pdf&

     usg=AOvVaw2ejxK0fsdG0atEx9V2M27W

Rubenfire, M. (2019). 2019 ACC/AHA Guideline on the Primary Prevention of

     Cardiovascular Disease. Retrieved from https://www.acc.org/latest-in-

25

cardiology/ten-points-to-remember/2019/03/07/16/00/2019-acc-aha-guideline-

on-primary-prevention-gl-prevention

Shaw, S.J., Huebner, C., Armin, J., Orzech, K. & Vivian, J. (2008). The role of culture in

health literacy and chronic disease screening and management. *Journal of*

Immigrant and Minority Health, 11, 460–467. https://doi-

org.proxy.seattleu.edu/10.1007/s10903-008-9135-5

Tindall, N. T. J., & Vardeman-Winter, J. (2011). Complications in segmenting campaign

publics: Women of color explain their problems, involvement, and constraints in

reading heart disease communication. *Howard Journal of Communications, 22*(3),

280-301. doi:10.1080/10646175.2011.590407

Washington State Department of Health. (n.d.). Manage blood pressure. Retrieved

from

https://www.doh.wa.gov/YouandYourFamily/IllnessandDisease/HeartDisease/Mana

geBloodPressure

Washington State Department of Health. (2017). *Chronic disease profiles by county:*

snohomish county [PDF file]. Retrieved from

https://www.doh.wa.gov/portals/1/Documents/Pubs/345-271-

ChronicDiseaseProfileSnohomish.pdf

Appendix B: Participant Executive Summary

A Provider Toolbox on Cardiovascular Disease Prevention in

Women of Color in the Primary Care Setting:

Executive Summary

Ellerey Nelson, RN, BSN

Seattle University

Background

Cardiovascular disease is the leading cause of death in women in the United States. Women of color (WOC) have a higher risk of CVD, paired with a decreased knowledge and understanding of CVD, compared to White women. In addition, healthcare providers are known to underestimate risk in this population, indicating a need for increased awareness amongst providers. Thus, the primary investigator of this scholarly project identified a need to close this gap in heart health knowledge between WOC and White women through enhanced provider to patient education in order to reduce further health disparity. A provider toolbox for CVD prevention in WOC in the primary care setting was therefore assembled and distributed to participants for clinic use.

Participant Survey Results

The participant survey had a 50% response rate (n=4). Overall, participants rated the toolbox favorably. The quantitative data from the Likert-type items and fill in the blank item is described below with accompanying bar graphs indicating the frequency of responses and the median and mode. The qualitative data from the free response questions, which underwent content analysis for themes, is summarized below.

Quantitative Data

Sea Mar Monroe clinic sees a mean of 15.3 patients who are WOC for CVD weekly (Question 1), according to participants who responded to this question (n=3). All participants (n=4) strongly agreed that the toolbox informed their knowledge on WOC and CVD (see Figure 1). 50% of participants strongly agreed that they felt better equipped to address this clinical practice issue after viewing the toolbox and its presentation, and the other 50% of participants somewhat agreed (see Figure 2). All participants strongly agreed that the toolbox will enable them to optimize cardiovascular care of WOC at risk for CVD (see Figure 3). All participants strongly agreed that the toolbox resource will help them facilitate evidence-based practice in their practice setting (see Figure 4).

The median and mode were analyzed to determine central tendency of responses. The scale for the responses ranged from numbers 1 through 5, with 1= strongly disagree and 5= strongly agree. Based on this information, it can be determined that the central tendency of responses was consistent with "strongly agree" for all questions except question three, which ranged from "agree" to "strongly agree" (see Table 1).

Qualitative Data

   The common themes identified were conceptualizing race as a specific risk factor, time as a barrier for both providers and WOC, and money and lack of prioritization as barriers for WOC.

   Race as a Specific Risk Factor. Participants indicated that the toolbox helped reinforce their knowledge of race as a specific risk factor for CVD. One respondent indicated that providers often approach patients in an algorithmic fashion when considering risk factors, and race is often overlooked.

   Time & Money. Time was an overarching theme related to barriers for CVD prevention for both providers and WOC. Participants wrote that short appointment times inhibited them from being able to provide adequate CVD education to patients. Additionally, lack of time was identified as a barrier for WOC to seek preventative care or make follow up appointments.

   Lack of Prioritization. Another theme was family prioritization. Participants described WOC patients as mothers, spouses and full-time workers, making them more likely to put their own health "on the back burner" and prioritize family needs above their own.

Implications for Future Practice

   The information and resources in the toolbox served as a useful resource in both increasing provider awareness of this health disparity and educating WOC patients on CVD. In the long term, it is predicted that use of this toolbox will improve health outcomes in this patient population if toolbox use is continued. Participants should note that practice guidelines will need to be periodically reviewed and changes made to the toolbox as indicated.
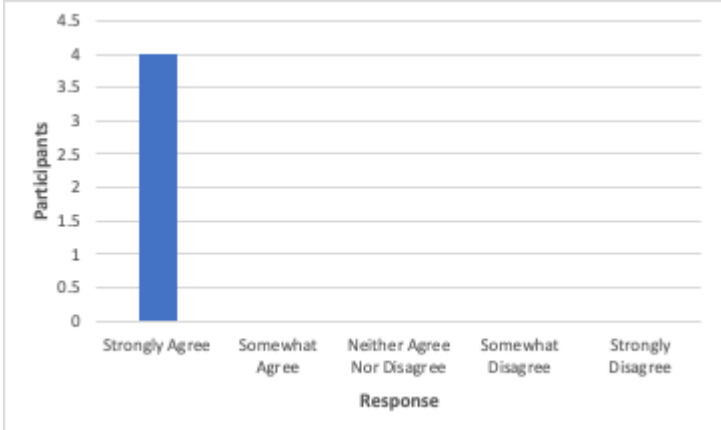
   Time was found to be a barrier for both providers and patients. Providers expressed difficulty providing in-depth education on CVD prevention due to short appointment times, and providers reported that patients are often unable or unwilling to take the time for preventative care and follow up. A potential solution to this dilemma would be to include alternate forms of CVD education in addition to typical provider-to-patient verbal education. Providers may use EPIC's patient education materials on CVD and attach it to the after-visit summary. This has the potential to increase patient education in a manner that is time-sparing for both patients and providers. Additionally, providers may take advantage of referring WOC at risk for CVD to the clinic health educator or nutritionist for further counseling.

   Additionally, this toolbox has the potential to be used in other practice settings where primary and preventative care is delivered. With the exception of health indicators specific to

Snohomish County, the toolbox is generalizable to a national audience, and Sea Mar Monroe may wish to distribute this toolbox to their other clinic locations throughout Washington State.
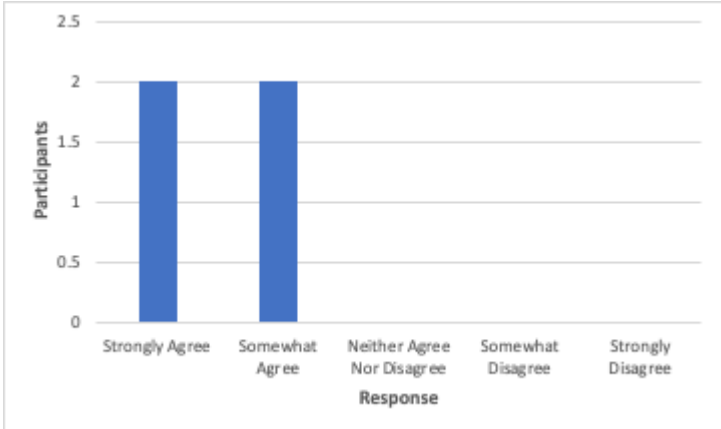
Figure 1

Question 2

Note. "This toolbox has informed my knowledge on this clinical practice issue."
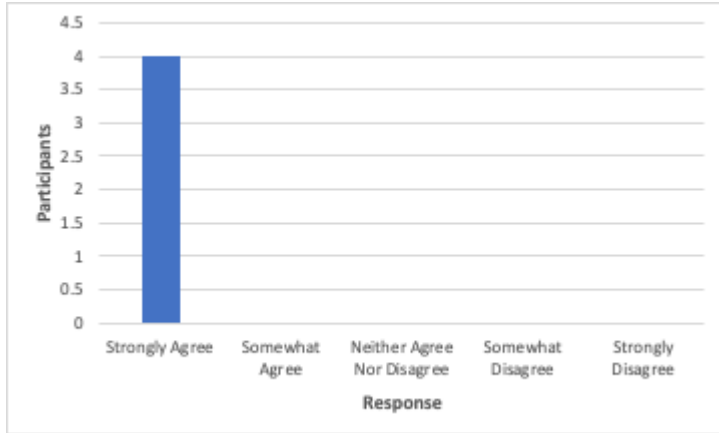
Figure 2

Question 3

Note. "I feel better equipped to address this clinical practice issue after viewing this toolbox and presentation."
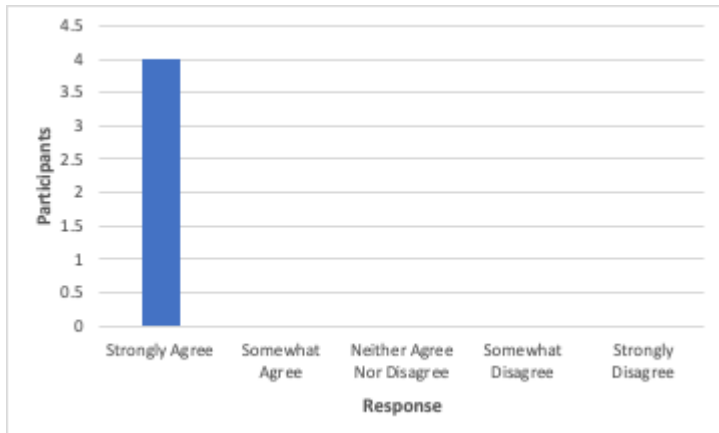
Figure 3

Question 4

Note. "The toolbox will enable me to optimize the cardiovascular care of women of color at risk for CVD."

Figure 4

Question 5

Note. "I anticipate that the toolbox resources will help me to facilitate evidence-based practice in my practice setting."

Table 1

Median and Mode of Likert-type Item Responses

Variable	Median	Mode
Question 2	5	5

Question 3	4.5	4, 5
Question 4	5	5
Question 5	5	5

Appendix C: Participant Survey

Approximately how many patients who are women of color do you see (have an appointment with) on a weekly basis?

This toolbox has informed my knowledge on CVD and women of color.
__Strongly Agree
__Agree
__Neutral
__Disagree
__Strongly Disagree

I feel better equipped to address this clinical practice issue after viewing this toolbox and presentation.
__Strongly Agree
__Agree
__Neutral
__Disagree
__Strongly Disagree

The toolbox will enable me to optimize the cardiovascular care of women of color at risk for CVD.
__Strongly Agree
__Agree
__Neutral
__Disagree
__Strongly Disagree

I anticipate that the toolbox resources will help me to facilitate evidence-based practice in my practice setting.
__Strongly Agree
__Agree
__Neutral
__Disagree
__Strongly Disagree

How has this toolbox impacted your approach to care of patients who are women of color at risk for CVD? Please explain.

How do you expect that provider use of this toolbox will impact patient outcomes? Please explain.

What barriers do you believe providers face in providing CVD education to patients? Please explain.

What barriers do you believe patients who are women of color face in taking action to reduce their risk of CVD? Please explain.