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A Survey of Providers and Patients Assessing the Need for and Use of Prevention Practitioners to Combat Obesity in the Primary Care Setting

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A Survey of Providers and Patients Assessing the Need for and Use of Prevention Practitioners
to Combat Obesity in the Primary Care Setting

Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Nursing
Practice at the University of Kentucky

By

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Louisville, KY

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Abstract

Purpose: The overall aim of this project was to gather information from two groups of stakeholders, providers and patients, on the feasibility of implementing prevention practitioners in the primary care system to address overweight and obesity.

Methods: This study utilized a quantitative descriptive design through the use of electronic surveys. Provider surveys were explained and presented during a monthly provider meeting. Patient flyers were posted in exam rooms and surveys were accessible through a provided link and QR code.

Results: Providers (N=10) agreed that they saw a need for the use of a prevention practitioner (Mean=4.44, SD=.88) as well as value added to patient outcomes with the use of a prevention practitioner program (Mean=4.56, SD=.88). Likewise, patients (N=25) expressed an overwhelming interest in a prevention program offered through the primary care office (Mean=4.30, SD=.80) as well as services to help motivate, encourage and follow-up with patient's lifestyle change behaviors (Mean=4.20, SD=.83).

Conclusion: This study suggests that both providers and patients are supportive of the idea of a practitioner situated in primary care, responsible for motivating and encouraging patients to reach their maximum health potential.

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Background

The World Health Organization (WHO) defines overweight and obesity as “abnormal or excessive fat accumulation that may impair health” (World Health Organization [WHO], 2017, para. 1). Body mass index (BMI), which is calculated as weight in kilograms divided by height in meters squared (kg/m^2) is often used to classify overweight (BMI 25-29.9) and obesity (BMI ≥ 30) (WHO, 2017). In 2015-2016, more than two-thirds of United States adults aged 20 and over were overweight or obese (Hales, Carroll, Fryar, & Ogden, 2017). The statistics around the globe are staggering, with world-wide obesity rates tripling over the past 40 years (WHO, 2017). This negative trend can be attributed to an increase in convenience food consumption and excess caloric intake and a decrease in movement resulting in a more sedentary lifestyle (WHO, 2017).

Being overweight or obese are major risk factors for other chronic, preventable diseases such as diabetes, cardiovascular diseases, obstructive sleep apnea, osteoarthritis, stroke and cancer (Centers for Disease Control and Prevention [CDC], 2017). The obesity epidemic has caused a ripple effect of comorbidities and such costly diseases can threaten disability and reduce an individual’s quality of life if not managed properly. Thus, it is important that we attack obesity from multiple angles in an effort to prevent these non-communicable diseases that are leading causes of death across the globe.

Besides the debilitating compilation of co-morbidities affecting people who are overweight or obese there are also direct medical costs of treating these obesity-related diseases.

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Annual medical costs are estimated to be \$266 higher for individuals who are overweight and \$1723 higher for those who are obese compared to individuals of normal weight in the United States (Tsai, Williamson, & Glick, 2011). There are also indirect costs of lost job productivity as well as increases in illness for people of increased size (CDC, 2012). The armed forces are even affected by implications of obesity as it has become difficult to find soldiers who are eligible for military service based on enlistment standards for weight and body fat (CDC, 2012). Therefore, obesity is a national crisis that has implied costs for everyone, not just those affected.

Overweight and obesity occur when, over a period of time, energy or calories consumed outweigh energy or calories expended resulting in increased adipose tissue (Ravussin & Ryan, 2018). In the United States, the overweight and obesity rate is estimated to be around 70% for adults over age 20, with Kentucky ranking seventh highest in the nation for adult obesity (Trust for America's Health and The Robert Wood Johnson Foundation, 2017). Overweight and obesity crosses all spans of socioeconomic levels, however, a higher prevalence is seen in females and African Americans (Ogden, Lamb, Carroll, & Flegal, 2010). It is known that as adiposity increases, so does the likelihood of multiple co-morbidities such as cardiovascular diseases, type II diabetes, cancers and other ailments (Chan & Woo, 2010). It is estimated that approximately 21% of the United States' annual healthcare dollars are spent on treating obesity-related conditions, which totals \$190.2 billion (Cawley & Meyerhoefer, 2012). If these trends continue, by the year 2030, about 8.5 out of 10 U.S. adults will be overweight or obese (Wang et al, 2008). While this is a multi-factorial problem, we must start taking steps to combat the ever-increasing adiposity of our nation, or else we will be buried by insurmountable health and economic burdens.

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Lifestyle behaviors mainly contribute to overweight and obesity, so it is fair to say that interventions that focus on physical activity, diet and stress reduction can play a key role in the prevention of excess weight gain. A prevention practitioner, as defined by Grunfeld et al (2014), would be an advanced practice registered nurse (APRN) who meets with patients at risk for or already overweight, who are at increased risk for chronic diseases based on exam findings by the primary care provider. During the extended visit the prevention practitioner would use an adaptation of the 5 A's model to *Ask* about current health behaviors, *Assess* readiness to change utilizing motivational interviewing, *Advise* a change and *Assist* in creating behavior change goals that are SMART (specific, measurable, achievable, realistic and timely). Lastly, the prevention practitioner would *Arrange* follow-up to monitor progress and make adjustments to the plan or goals as necessary. This model has been endorsed by the US Preventative Services Task Force as a framework for behavioral counseling (U.S. Preventative Services Task Force [USPSTF], 2016). Although obesity outcomes depend more on patient behaviors than on physician recommendations, using the 5 A's can guide practitioners in primary care through the process of counseling a patient about behavior change (Schlair, Moore, McMacken, & Jay, 2012).

Primary care providers are increasingly called upon to address one of the Healthy People 2020 leading health indicators, weight status. Currently, our primary care system is focused on and swamped by acute and chronic-disease management. However, with the implementation of prevention practitioners, this healthcare system would be aligned with the Institute of Medicine's (IOM's) recommendation: that health care providers adopt standards of practice in the prevention, screening, diagnosis and treatment of overweight and obese patients (Institute of Medicine [IOM], 2012). There is strong evidence that APRN-led lifestyle interventions can and should be implemented in primary care settings (Jarl et al, 2014; Whittemore, 2010; Jeon, S &

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Benavente, 2016). By becoming partners with patients, providers can offer personalized prescriptions that will help patients attain and maintain healthy lifestyles.

The purpose of this study is to examine attitudes towards implementing a prevention practitioner program in the primary care offices of a multi-site healthcare organization in a metropolitan mid-southern city. This is relevant to this healthcare organization because the use of prevention practitioners in primary care will help promote the Healthy People 2020 goal to promote health and reduce chronic disease.

The key aims of this project are:

- 1) To assess the need for and use of prevention practitioners in the primary care setting by surveying primary care providers; and
- 2) To assess the patient perspective through the use of a survey

The overall aim of this project is to gather information from two groups of stakeholders on the need for prevention practitioners in the primary care system within this healthcare organization.

The health of future generations depends on how we handle this obesity epidemic. We must offer guidance to reinforce the notion that individuals are responsible for their own health, while also supporting them on their wellness journey through the use of programs aimed at prevention.

Theoretical/Conceptual Framework

The choices an individual makes day in and day out become lifestyle habits that can substantially influence one's quality of health. When this is understood it is apparent that individuals have some level of control over their health. Albert Bandura's Social Cognitive Theory revolves around the concept of reciprocal determinism or the interaction of personal,

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environmental and behavioral factors (Nutbeam, Harris & Wise, 2010). The Social Cognitive theory also recognizes behavioral capability, or the ability of a person to perform a behavior through acquired knowledge and skills, and observational learning, the modeling of witnessed behaviors (Nutbeam et al, 2010). Reinforcements, which can be internal or external influencers of behavior, and expectations, the anticipated consequences, contribute to the maintenance or discontinuation of a behavior (Nutbeam et al, 2010). Bandura also takes self-efficacy into consideration, the belief in one's ability to perform a specific activity. This self-efficacy plays a key role in human motivation and action related to personal change (Bandura, 2004).

The prevention practitioner proposed in this study is in alignment with the social cognitive theory. Health promotion and disease prevention strategies by this provider include motivational interviewing to help patients see how habit changes are in their best interest and align with their values. Knowledge and resources are shared, self-efficacy is realized, short-term, attainable goals are documented, and guidance and support are available, leading to self-management and ownership of health. Assisting patients in realizing and reaching their maximum health potential puts the power back in their hands and instills the belief that their health is a direct reflection of their actions.

Review of Literature

To review the literature, a search of CINAHL, Pubmed and Medline databases was performed using a combination of keywords “lifestyle intervention”, “chronic disease prevention” and “primary care”. The search was limited to English language articles involving adult populations and some form of lifestyle intervention concerning diet or physical activity related to risk reduction and/or disease prevention. Studies were only considered if published

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between 2013 and 2019. Titles and abstracts were reviewed for relevance to the study question, “For adults visiting primary care clinics does the implementation of a lifestyle change program reduce the risk of chronic disease development?”, and five articles were selected for review.

Upon review of these articles, the evidence demonstrates that lifestyle interventions implemented in primary care settings are statistically and clinically significant at reducing weight and chronic disease risk factors (Grunfeld et al., 2013; Jarl et al., 2014; Melvin et al., 2017; Zhang et al., 2017). Notably, by utilizing multi-component interventions, effects were more likely observed in weight reduction (Melvin et al., 2017) and cardiovascular risk factor reduction (Zhang et al., 2017) than with the utilization of a single intervention.

Studies differed in their evaluations of a physical activity intervention utilized alone. Melvin et al. (2017) reported that lifestyle interventions focused on physical activity changes were of high quality. The authors suggested that patients may be more capable of making physical activity changes rather than dietary changes because this behavior can be modified through strategies that do not require additional financial resources. The authors went on to say that limited socioeconomic resources can reduce a patient’s capacity to make necessary dietary changes. Whereas Zhang et al. (2017) reported lifestyle interventions focused on physical activity alone were of low quality, possibly related to low adherence, insufficient exercise volume or length of intervention.

In 2013 the American Heart Association, The American College of Cardiology and The Obesity Society released recommendations for the management of overweight and obesity in adults. The five grade A recommendations include; (1) Use BMI as a first screening step, followed by waist circumference to identify at risk patients; (2) Counsel patients about the benefits of weight loss; (3) Prescribe a reduced caloric intake diet as part of a comprehensive

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lifestyle intervention; (4) A comprehensive program, lasting six months or longer, focused on diet, physical activity and behavior modification should be recommended to patients who need to lose weight; (5) Patients with a BMI > 35 with a comorbidity or BMI > 40 should be advised on bariatric surgery as an appropriate option (Jensen et al., 2013). While this and other clinical practice guidelines recommend chronic disease prevention and screening take place in primary care offices, there is a gap between what is recommended and what is actually being done. Recent studies show that on average only 20% of obese patients have received weight loss counseling from their primary care provider (Lewis & Gudzone, 2014). Some common barriers that PCPs report as reasons they do not provide the recommended counseling include lack of training, lack of time, lack of reimbursement and limited ability for referrals. The use of the 5A's model outlined previously would assist patients in recognizing psychosocial issues, psychiatric and medical comorbidities that may have been associated with previous failure of sustained lifestyle modifications. These factors must be addressed in order to maximize outcomes and create sustainable changes.

Primary care nurse practitioners have been known to be effective at utilizing lifestyle interventions to achieve cardiovascular risk reduction (Jarl et al., 2014) and also type II diabetes prevention (Whittemore et al., 2010) in the U.S. Likewise, Grunfeld et al (2014) demonstrated the effectiveness of primary prevention of diabetes and heart disease through lifestyle interventions tailored to Canadian patients in primary care. While the majority of these studies had non-Hispanic, female participants with some post-secondary education, Whittemore et al (2010) intervened in an ethnically diverse, moderately low-income sample with similar benefits seen.

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Besides lifestyle modifications, other options available to those who are overweight or obese are medicines that decrease appetite and/or decrease absorption of fat and surgeries to reduce the amount of food your stomach can hold (Nammi, Koda, Chinnala, & Boini, 2004). While these options have success for some people, they do not come without side effects and risks (Kang & Park, 2012). APRN-led lifestyle interventions may be a better solution to reduce and prevent the incidence of overweight and obesity. Pharmaceuticals and surgeries are expensive and risky whereas prevention costs pale in comparison to these options as well as to the management of compounded comorbidities (WHO, 2000).

With overweight and obesity rates on the rise and contributing to chronic disease comorbidities, the research is compelling for individualized lifestyle interventions to be implemented in primary care settings. We must attack this epidemic head on and aim for prevention strategies to decrease the number of patients suffering from complicated, costly, compounded conditions.

Methods

Design

This study utilized a quantitative descriptive design through the use of electronic surveys. Survey responses were obtained from a convenience sample of two groups of stakeholders, primary care providers and patients, at the selected offices over a period of two months (August 1 – September 30, 2019).

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Setting

This study took place within two primary care offices within a large multi-hospital health care system in a metropolitan mid-south city. These are two of the heaviest volume offices seeing upwards of 150+ patients per day at each location.

Sample

The sample for this study was based on two separate populations, providers at select locations and the patients seen at these locations during the study months. Provider inclusion criteria included being a current provider within one of the healthcare organizations primary care offices with any of the following degrees: Medical Doctor (MD), Doctor of Osteopathy (DO), Physician's Assistant (PA), Advanced Practice Registered Nurse – master's prepared (APRN-MSN), and Advanced Practice Registered Nurse – doctoral prepared (APRN-DNP). Exclusion criteria included providers no longer employed by Norton Healthcare or working in a specialty office other than primary care. Patient inclusion criteria included adults over the age of 18 of all genders, races and ethnicities currently being seen as a patient at either of the participating NCMA locations. Patient participants must also have been able to read English and have access to a smart device to access the electronic survey.

Measures

The electronic surveys were developed for this study in Qualtrics and their development was guided by behavior change surveys previously utilized by Dr. Okoli and colleagues in their research (Okoli et al, 2019; Okoli et al, 2019). The provider survey had 36 total questions, including 6 demographic and 30 Likert-scale questions.

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Demographic variables measured for the provider survey included: age (in years), gender (male vs. female), race (African American vs. Caucasian), ethnicity (Hispanic vs. Non-Hispanic), provider title (Medical Doctor (MD) vs. Doctor of Osteopathy (DO) vs. Physician's Assistant (PA) vs. Masters-prepared Advanced Practice Registered Nurse (APRN-MSN) vs. Doctoral-prepared Advanced Practice Registered Nurse (APRN-DNP) and experience (in years of practice as a provider) (see Appendix A).

Provider use of the 5A's model in current practice was measured with six questions, each on a 4-point Likert scale ranging from 1 (never) to 4 (very often). Three questions measured provider intentions, one question measured perceived behavioral control, and 16 questions measured barriers (provider (6), patient (3) or system-level (7)) that interfere with lifestyle modification recommendations for weight; these questions were measured using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), as were four questions dealing with perceived value and usefulness of a prevention practitioner program (see appendix A).

The patient survey had 22 total questions, including five measuring demographic variables which were age (in years), gender (male vs. female), race (African American vs. Caucasian vs. other), ethnicity (Hispanic vs. Non-Hispanic), and education level (less than high school vs. high school graduate/GED vs. some college/vocational school vs. college degree vs. master's degree vs. doctorate degree) (see Appendix B).

Two questions measured patient knowledge of whether increased weight put them at risk of diabetes, high blood pressure, high cholesterol, heart attack, anxiety/depression and cancer using a yes/no response. Three questions measured patient expectations of provider, two questions measured satisfaction with current practice and six questions measured interest in a prevention practitioner program using a 5-point Likert scale ranging from 1 (strongly disagree)

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to 5 (strongly agree). Patient self-efficacy related to motivation and confidence was measured with four questions using a 5-point Likert scale ranging from 1 (not at all) to 5 (very) (see Appendix B).

Procedures

Upon obtaining Institutional Review Board and Norton Research Office approval, contact was made with each office manager and patient flyers were personally delivered to offices. Patient flyers were laminated and mounted in each exam room (see Appendix C) and medical assistants made patients aware of the flyer and study as they roomed patients for their appointment. Patients could then view the flyer and if they chose to, use the QR code or web link to access the survey. Once the participant accessed the online survey a cover letter would appear denoting implied informed consent should the patient continue to scroll through and answer the survey questions on their own personal device.

Providers at the NCMA locations were briefed on the purpose of the project during their monthly meeting and a cover letter was presented which included a QR code and web link (see Appendix D). Providers were able to voluntarily access the survey with the given QR code or web link and take the online survey on their own time using their own personal devices.

Surveys were able to be accessed electronically in Qualtrics and available via a provided link or QR code between July 1 and September 30, 2019. Survey results were stored on the secure Norton H-drive and accessed only on a password-protected computer.

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Data Analysis

Demographic characteristics of providers and patients were summarized using frequency distributions. Means and standard deviations were used to summarize the Likert-type survey questions for both the provider and patient responses. Statistical analysis consultation was provided by a University of Kentucky College of Nursing statistician and professor. All data analysis was conducted using SPSS, version 25.

Results

Provider survey

Ten providers volunteered to participate in the survey. The provider sample was solely female (100%) and Non-Hispanic (100%), 96% Caucasian with an age range of 30-59 years. Seventy percent (n=7) of respondents were Nurse Practitioners and had worked in their professional role for 0-4 years (see Table 1).

On a Likert-scale from 1 to 5 with 1 being 'strongly disagree' and 5 being 'strongly agree', providers unanimously agreed that they intended to provide lifestyle modification counseling to patients who were overweight/obese (Mean=5.00, SD=.00) and felt confident doing so (Mean=4.78, SD=.67). However, the most common provider-specific barriers to discussing lifestyle modifications were knowledge of available resources for referral (Mean=3.67, SD=1.26) followed by not being properly equipped (Mean=3.22, SD=1.64). Barriers that did not seem to have much influence included feelings of providers not having influence on patient behaviors (Mean=1.44, SD=.77) and worry that advising patients on weight will negatively affect the provider-patient relationship (Mean=1.56, SD=.73) (see Table 2).

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The most common patient-specific barrier that providers felt contributed to less than adequate lifestyle behavior modification discussions included patients needing to be motivated before they can be assisted in behavior change (Mean=3.78, SD=1.48). Providers were somewhat concerned that patients would be dissatisfied by continuously confronting them about behavioral change in regard to their weight (Mean=2.67, SD=1.00) (see Table 2).

Providers agreed that system/organizational barriers to effective lifestyle modification discussions included lack of good quality behavioral/lifestyle modification materials, such as pamphlets, brochures or education links used as references on the after-visit summary (Mean=4.11, SD=1.05). Providers also indicated there was limited time to sufficiently engage patients (Mean=3.67, SD=1.41) and there was a lack of training to help providers learn to engage overweight or obese patients in behavioral change (Mean=3.56, SD=1.42) (see Table 2).

Questions regarding the use of the 5A's model in current practice revealed that most providers do ask patients about current health behaviors (Mean=3.89, SD=.33), assess a patient's weight status, BMI or waist circumference (Mean=3.67, SD=.71), as well as use motivational interviewing to assess a patient's motivation to change (Mean=3.56, SD=.73). Providers also advise a lifestyle modification or behavior change (Mean=3.78, SD=.67), but find it more difficult to assist in creating behavior change goals that are SMART (Mean=3.00, SD=.87) and arrange follow-up to specifically monitor progress of behavior change (Mean=3.00, SD=1.0) (see Table 2).

The majority of providers agreed that they saw a need for the use of a prevention practitioner (Mean=4.44, SD=.88) as well as value added to patient outcomes with the use of a prevention practitioner program (Mean=4.56, SD=.88). Providers recognized that they had many patients that would benefit from the addition of a prevention practitioner (Mean=4.56, SD=.88)

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and stated they would encourage their at-risk patients to see this practitioner to assist them with motivation and implementation of lifestyle modifications (Mean=4.56, SD=.88) (See Table 2).

Patient survey

Twenty-five patients volunteered to participate in the survey. The patient sample was also predominantly female (72%) and Caucasian (95%). The majority of participants were in the 50-69-year age range (60%) and most had a college degree (36%) or some college/trade school (28%) (see Table 3).

Overwhelmingly, patients understood that increased weight put them at risk for Diabetes (100%), high blood pressure (100%), high cholesterol (100%), heart attack (100%), and anxiety/depression (95%). Fewer patients believed that increased weight would put them at risk for certain types of cancers (65%) (see Table 4).

On a Likert-scale from 1 to 5 with 1 being ‘strongly disagree’ and 5 being ‘strongly agree’ patients strongly agreed that they not only expected their provider to discuss weight (Mean=4.63, SD=.50) but also wanted their provider to discuss weight in relation to chronic disease (Mean=4.60, SD=.60). Almost every patient surveyed trusted that their provider made suggestions that were in their best interest (Mean=4.90, SD=.31) (see Table 4).

Many patients felt satisfied with the amount of discussion they have with their provider on getting and staying healthy (Mean=3.80, SD=1.11). However, a comparable number of patients would like to have more time for discussions related to getting and staying healthy (Mean=3.50, SD=1.10) and wish their primary care provider knew more about available community resources to assist in getting and staying healthy (Mean=3.58, SD=1.35). There was an overwhelming interest in a prevention program offered through the primary care office

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(Mean=4.30, SD=.80) as well as services to help motivate, encourage and follow-up with patient's lifestyle change behaviors (Mean=4.20, SD=.83) (see Table 4).

For measures of self-efficacy, on a Likert-scale ranging from 1 to 5 with 1 being 'not at all' and 5 being 'very', mean scores were fairly high indicating that patients were confident that they could make lifestyle changes (Mean=4.20, SD=.83) and were ready to make lifestyle changes to improve their health (Mean=4.10, SD=.85). However, on a yes/no question with 1 being yes and 2 being no, patients disagree that they have enough motivation without the providers assistance (Mean=1.26, SD=.45) (see Table 4).

Discussion

This study was an early stage exploration of a new type of prevention program that could possibly be implemented within this healthcare network of primary care practices. The study was able to provide preliminary data that shows support by two groups of stakeholders, providers and patients, in favor of the addition of prevention practitioners to facilitate health promotion and disease prevention.

The very first training program for nurse practitioners in the United States focused on family health, disease prevention and health promotion (Keeling, 2015). While there has been substantial growth and development of the APRN role since its inception in 1965 our focus remains the same, providing access to care while promoting health. This prevention practitioner role takes APRN's back to their roots and reminds us that much can be learned from nursing's past (Keeling, 2015).

The proposed prevention practitioner role is comparable to another new and emerging role in healthcare, the "health and wellness coach (HWC)". Health coaching originates from

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behavior change theories, such as Albert Bandura's Social Cognitive Theory (Bandura, 2004). According to a concept analysis by Olsen (2014), health coaching is defined as "a goal-oriented, client-centered partnership that is health-focused and occurs through a process of client enlightenment and empowerment" (p. 18). A HWC empowers a patient to become actively engaged in their healthcare by encouraging patient-directed goal setting, self-discovery and developing the skills, confidence and accountability for managing one's health (Bandura, 2004).

A systematic review by Kivela et al (2014) showed that the use of health coaching produced positive effects on patients' physiological, behavioral and psychological conditions and on their social life, namely better weight management, increased physical activity and improved physical and mental health status. These positive lifestyle changes take time and involve cultivating a trusting relationship where a patient feels safe in opening up and participating in motivational interviewing. For the seventeenth consecutive year, nurses have been ranked by the public as the most trusted profession in Gallup's ethic survey (Brennan, 2018). Likewise, in a recent telephone survey of 2000 random Americans conducted by an independent research company for The Commonwealth Fund, The New York Times and The Harvard School of Public Health, the average American trusts nurses more so than any other group to improve the current healthcare system (Hohman 2019). Thus, nurse providers are well-seated to take on the prevention practitioner role (McCarthy, 2019).

Limitations

Limitations of this study include inability to generalize results to larger populations given the small sample size and lack of diversity of the patient and provider participants. Also,

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because this was a small-scale study located in one metropolitan region, results may not be generalizable to other regions.

Results may be gender-biased given that 100% of provider participants and 72% of patient participants were female.

A final limitation is the reliability and validity of the surveys considering they were developed specifically for this study and this was the first time they had been used.

Implications and Recommendations

As lifestyle-related chronic diseases continue to rise and increase healthcare costs in the United States, it becomes ever-important for healthcare providers to engage patients in successful behavioral interventions that will aid in better disease prevention and management (Simmons & Wolever, 2013). Primary care providers can play a significant role in a patient's behavior change process to improve outcomes and reduce the burden of chronic disease. However, until adequate time and reimbursement for behavioral counseling is allowed, it is not realistic or fair to hold primary care providers solely responsible for this shift in mindset (Wolever et al, 2017). By partnering with patients, prevention practitioners can shift healthcare encounters to be less about disease and more about informed, activated patients taking ownership for their personalized healthcare plan (Simmons, Wolever, Bechard & Synderman, 2014).

Future studies should focus on how to best implement behavior change programs in the primary care setting as well as long-term sustainability and cost-effectiveness. It would also be relevant to evaluate the relationship between primary care providers and prevention practitioners with evaluation studies.

Conclusion

Prevention of obesity and other chronic comorbidities is a mainstay of healthcare reform and we would be wise to make such changes a priority on the frontlines, in the primary care setting. Healthcare is in a season of change, currently transitioning away from fee-for-service models and towards value-based purchasing, meaning reimbursement will be based on quality-indicators including patient outcomes and satisfaction. It would be in a healthcare organizations best interest to identify cost-conscious ways to engage patients so as to not only improve their outcomes but increase their satisfaction with healthcare interactions. This study suggests that both providers and patients are supportive of the idea of a practitioner situated in primary care, responsible for motivating and encouraging patients to reach their maximum health potential.

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Table 1. Provider demographics (N=10)

Provider Demographic	Percent
Age	
30-39	40
40-49	40
50-59	20
Gender	
Female	100
Male	0
Race	
African American	4
Caucasian	96
Ethnicity	
Non-Hispanic	100
Hispanic	0
Professional Title	
MD	20
NP	70
PA	10
Years in practice	
0-4	70
5-10	10
16-20	10
20-25	10

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Table 2. Provider Likert-scale survey items by topic

Topic	Mean(SD)
Provider intentions	
I want to provide lifestyle modification counseling to patients	5.00 (0.0)
I intend to provide lifestyle modification counseling to patients	5.00 (0.0)
Perceived behavioral control	
I am confident I could provide behavioral counseling and recommend lifestyle modifications to patients who are overweight/obese	4.78 (.67)
Current use of 5A's in practice	
I often ASK patients about current health behaviors	3.89 (.33)
I often ASSESS a patient's weight status with them (BMI, waist circumference)	3.67 (.71)
I often ASSESS a patient's motivation to change current behaviors by using motivational interviewing	3.56 (.73)
I often ADVISE a lifestyle modification or behavior change	3.78 (.67)
I often ASSIST in creating behavior change goals that are SMART	3.00 (.87)
I often ARRANGE follow-up to specifically monitor progress of behavior change	3.00 (1.0)
Provider specific barriers to lifestyle modifications	
Knowledge of available resources for referral	3.67 (1.26)
Providers have little influence on patient behaviors	1.44 (.77)
Not the role of providers	1.11 (.33)
Advising will negatively affect patient/provider relationship	1.56 (.73)
Providers are willing but not properly equipped	3.22 (1.64)
No confidence in personal skills	2.44 (1.59)
Patient specific barriers to lifestyle modifications	
Patient need to be motivated	3.78 (1.48)
Continuously asking will cause dissatisfaction	2.67 (1.0)
Patients do not expect advise	1.67 (.71)
System/organizational barriers to lifestyle modifications	
Current overweight/obese programs ineffective	3.33 (1.73)
Lack of behavioral/lifestyle modification materials	4.11 (1.05)
Lack of provider training	3.56 (1.42)
Limited time to sufficiently engage	3.67 (1.41)
Lack of adequate follow-up	3.22 (1.20)
Value and usefulness of prevention practitioner	
I see a need for the use of a PP	4.44 (.88)
I see value added to patient outcomes with the use of a PP	4.56 (.88)
I have many patients that would benefit from seeing a PP	4.56 (.88)
I would encourage my at-risk patients to see the PP	4.56 (.88)

PREVENTION PRACTITIONERS IN PRIMARY CARE

Table 3. Patient demographics (N=25)

Patient Demographic	Percent
Age	
18-29	4
30-49	20
50-69	60
70-80+	16
Gender	
Female	72
Male	28
Race	
Caucasian	95
African American	5
Ethnicity	
Hispanic	4
Non-Hispanic	96
Education Level	
High school or below	20
Some college/trade school	28
College degree	36
Master's degree	16

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Table 4. Patient Likert-scale survey items by topic

Topic	Mean(SD) or %
Knowledge of risks associated with increased weight	
Diabetes	100
High blood pressure	100
High cholesterol	100
Heart attack	100
Anxiety/Depression	95
Cancer	65
Patient expectations of provider	
Expect provider to discuss weight r/t chronic disease	4.63 (.50)
Want provider to discuss weight r/t chronic disease	4.60 (.60)
Trust provider input is in my best interest	4.90 (.31)
Patient satisfaction with current practice	
Satisfied with amount of discussion r/t getting/staying healthy	3.80 (1.11)
Patient self-efficacy	
Enough motivation to change without providers help	1.26 (.45)
Confident I can make lifestyle changes to improve health	4.20 (.83)
Ready to make lifestyle changes to improve health	4.10 (.85)
Interest in prevention practitioner	
Would like more time for discussion with provider	3.50 (1.10)
Wish PCP knew more about available resources	3.58 (1.35)
Interested in a program revolved around prevention of chronic disease	4.30 (.80)
Interested in help with motivation, encouragement and follow-up r/t lifestyle change behaviors	4.20 (.83)

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Appendix A

Provider survey

Start of Block: Default Question Block

Q1 What is your age range?

- 20-29 (1)
 - 30-39 (2)
 - 40-49 (3)
 - 50-59 (4)
 - 60-69 (5)
 - 70-79 (6)
 - 80+ (7)
-

Q2 What is your gender

- Male (1)
- Female (2)

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q3 What is your race?

- Caucasian (1)
 - African American (2)
 - Asian (3)
 - Pacific Islander (4)
 - Other (5) _____
-

Q4 What is your ethnicity?

- Hispanic (4)
 - Non-hispanic (5)
-

Q5 What is your professional title?

- MD (1)
 - DO (2)
 - APRN-MSN (3)
 - APRN-DNP (4)
 - PA (5)
-

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q6 How many years of practice do you have in this professional role?

- 0-4 (1)
- 5-10 (2)
- 11-15 (3)
- 16-20 (4)
- 21-25 (5)
- 25+ (6)

Page Break

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q7 Indicate your level of agreement with the following questions on a scale of 1 to 5, with 1 being 'strongly disagree' and 5 being 'strongly agree'.

I **expect** to provide lifestyle modification counseling to patients over the next 6 months.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

Q8 I **want** to provide lifestyle modification counseling to patients over the next 6 months.

- 1 (strongly disagree) (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (strongly agree) (5)

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q9 I **intend** to provide lifestyle modification counseling to patients over the next 6 months.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

Q10 I am confident that I could provide behavioral counseling, recommending lifestyle modifications to patients who are overweight/obese.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q11 I feel I have enough time during an appropriate patient appointment to effectively address lifestyle modifications and behavior change.

- 1 (strongly disagree) (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (strongly agree) (5)

Q12 I feel there is adequate follow-up support for patients to sustain lifestyle modification behavior change.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

Q13 I have sufficient knowledge of available community resources in which to refer patients that need assistance with lifestyle modifications.

- 1 (strongly disagree) (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (strongly agree) (5)

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q14 I see a need for the use of a prevention practitioner role.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

Q15 I see value added to patient outcomes with the use of a prevention practitioner program.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q16 I have many patients that would benefit from the addition of a prevention practitioner.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

Q17 I would encourage my at risk patients to see the prevention practitioner to assist them with motivation and implementation of lifestyle modifications.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

Page Break

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q18 Regarding the use of the 5A's model in your practice, please indicate how often you do the following activities:

ASK patients about current health behaviors.

- 1 = Never (1)
 - 2 = Seldom (2)
 - 3 = Occasionally (3)
 - 4 = Very often (4)
-

Q19 ASSESS a patient's weight status with them (specifically BMI, waist circumference).

- 1 = Never (1)
 - 2 = Seldom (2)
 - 3 = Occasionally (3)
 - 4 = Very often (4)
-

Q20 ASSESS a patient's motivation to change current behaviors by using motivational interviewing.

- 1 = Never (1)
 - 2 = Seldom (2)
 - 3 = Occasionally (3)
 - 4 = very often (4)
-

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q21 ADVISE a lifestyle modification or behavior change.

- 1 = Never (1)
 - 2 = Seldom (2)
 - 3 = Occasionally (3)
 - 4 = Very often (4)
-

Q22 ASSIST patients in creating behavior change goals that are SMART (specific, measurable, achievable, realistic, timely).

- 1 = Never (1)
 - 2 = Seldom (2)
 - 3 = Occasionally (3)
 - 4 = Very often (4)
-

Q23 ARRANGE follow-up with patients to specifically monitor progress of behavior change.

- 1 = Never (1)
 - 2 = Seldom (2)
 - 3 = Occasionally (3)
 - 4 = Very often (4)
-

Page Break

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q24

Indicate your level of agreement with the following questions on a scale of 1 to 5, with 1 being 'strongly disagree' and 5 being 'strongly agree'.

Providers can do little to influence the behavior of patients who are overweight/obese.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

Q25 Existing programs within Norton Healthcare Community Medical Associate offices for patients who are overweight/obese are ineffective.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q26 It is not part of my job to initiate discussions regarding behavior change with overweight/obese patients.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

Q27 Advising overweight/obese patients on behavior change may negatively affect a provider's relationship with the patient.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q28 Many providers are willing but are not properly equipped to engage overweight/obese patients in behavioral change/lifestyle modifications.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

Q29 A patient who is overweight/obese needs to be motivated before he/she can be assisted in behavior change.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q30 I do not have confidence in my behavioral counseling about lifestyle modification skills.

- 1 (strongly disagree) (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (strongly agree) (5)

Q31 Continuously confronting patients about their weight regarding need for behavioral change will cause patients to become dissatisfied with their provider.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

Q32 Patients who are overweight/obese do not expect advice for behavioral/lifestyle modification change from their healthcare provider.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q33 There is a lack of good quality behavioral/lifestyle modification materials (such as pamphlets, brochures, education links used as references on after visit summary – AVS) for patients who are overweight or obese.

- 1 (strongly disagree) (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (strongly agree) (5)

Q34 There is a lack of training for providers to engage overweight or obese patients in behavioral change/lifestyle modification.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q35 There is limited time to sufficiently engage an overweight or obese patient in behavioral change/lifestyle modifications.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

Q36 There is a lack of access for adequate follow-up of patients to specifically monitor progress of behavior change.

- 1 (strongly disagree) (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (strongly agree) (5)

End of Block: Default Question Block

PREVENTION PRACTITIONERS IN PRIMARY CARE

Appendix B

Patient Survey

Q1 To Norton Community Medical Associates Patients,

Researchers at the University of Kentucky are inviting you to take part in a survey about your thoughts on health care that focuses on helping you get and stay healthy. The survey will take about 5 minutes to complete. Although you may not benefit from taking this survey, your answers could help us understand more about how to better help our patients in primary care. Some people feel good knowing they have added to research that could help others in the future.

There are no known risks to participating in this study. We are not asking for your name or any identifying information. No names will appear or be used on research documents or be used in presentations or publications. The research team will not know that any answers came from you, or even if you took the survey. We hope to have about 100 people take the survey, so your answers are important to us. Of course, you have a choice about whether or not to complete the survey, but if you do, you are free to skip any questions or stop at any time.

If you have questions about the study, please feel free to ask; my contact information is given below. If you have complaints, suggestions, or questions about your rights as a research volunteer, contact the staff in the University of Kentucky Office of Research Integrity at 859-257-9428 or toll-free at 1-866-400-9428.

Thank you in advance for your assistance with this important project. If you wish to proceed, continue scrolling to access the survey below.

Sincerely,

Amanda Lyons
College of Nursing, University of Kentucky
1-502-836-2148
Amanda.lyons84@uky.edu

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q2 What is your age range?

- 18-29 (1)
 - 30-39 (2)
 - 40-49 (3)
 - 50-59 (4)
 - 60-69 (5)
 - 70-79 (6)
 - 80+ (7)
-

Q3 What is your race?

- Caucasian (1)
 - African American (2)
 - Asian (4)
 - Pacific Islander (5)
 - Other (6) _____
-

Q4 What is your ethnicity?

- Hispanic (1)
 - Non-hispanic (2)
-

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q5 What is your gender

- Male (1)
 - Female (2)
 - Other (3)
-

Q6 What is the highest grade or year of school you completed?

- Less than high school (1)
 - High school graduate or GED (2)
 - Some college/ vocational/trade school degree (3)
 - College degree (4)
 - Masters degree (5)
 - Doctorate degree (6)
-

Page Break

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q7 In your opinion, does being overweight put you at increased risk for...

	Yes (1)	No (2)
Diabetes (high blood sugar) (1)	<input type="radio"/>	<input type="radio"/>
High blood pressure (2)	<input type="radio"/>	<input type="radio"/>
High cholesterol (3)	<input type="radio"/>	<input type="radio"/>
Heart attack (4)	<input type="radio"/>	<input type="radio"/>
Cancer (5)	<input type="radio"/>	<input type="radio"/>
Depression/Anxiety (6)	<input type="radio"/>	<input type="radio"/>

Q8 Indicate your level of agreement with the following questions on a scale of 1 to 5, with 1 being 'strongly disagree' and 5 being 'strongly agree'.

I **expect** my provider to discuss my weight status in relation to my risk for chronic diseases (such as high blood pressure, high cholesterol, diabetes) at scheduled appointments.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q9 I **want** my provider to discuss my weight status in relation to my risk for chronic diseases (such as high blood pressure, high cholesterol, diabetes) at scheduled appointments.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

Q10 I trust my provider to make suggestions that are in my best interest.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q11 I worry about my risk for getting chronic diseases (such as high blood pressure, high cholesterol or diabetes).

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

Q12 I feel there is little I can do to prevent myself from having chronic diseases (such as high blood pressure, high cholesterol or diabetes).

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

PREVENTION PRACTITIONERS IN PRIMARY CARE

Q13 I am satisfied with the amount of discussion I have with my provider on getting/staying healthy.

- 1 (strongly disagree) (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (strongly agree) (5)

Q14 I would like to have more time for discussion with my provider on getting/staying healthy.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

Q15 I wish my primary care provider knew more about available community resources to assist me with getting/staying healthy.

- 1 (strongly disagree) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (strongly agree) (5)
-

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Q16 I would be interested in a program offered through this office that was designed to assist me in being healthier in an effort to prevent chronic diseases (such as high blood pressure, high cholesterol, or diabetes).

- 1 (strongly disagree) (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (strongly agree) (5)
-

Q17 I feel I would be healthier if I made lifestyle changes (such as improving my diet, exercise, or stress management).

- Yes (1)
- No (2)
-

Display This Question:

If I feel I would be healthier if I made lifestyle changes (such as improving my diet, exercise, or... = Yes

Q18 If yes, I would be willing to make lifestyle changes if I had a provider to guide me through the process.

- Yes (1)
- No (2)
-

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Q19 I have enough motivation to change lifestyle habits if I wanted to without anyone else's help.

- Yes (1)
 - No (2)
-

Page Break

Q20 Answer the following questions on a scale of 1 to 5, with 1 being 'not at all' and 5 being 'very'.

How **important** is it for you to have healthy lifestyle habits (foods you eat, exercise you get, way you manage stress)?

- 1 (not at all) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (very) (5)
-

Q21 How **confident** are you that you can make lifestyle changes to improve your overall health?

- 1 (not at all) (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (very) (5)

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Q22 How **ready** are you to make lifestyle changes that will improve your overall health?

- 1 (not at all) (1)
 - 2 (2)
 - 3 (3)
 - 4 (4)
 - 5 (very) (5)
-

Q23 I **am interested** in my primary care team offering a service to help motivate, encourage and follow-up with my lifestyle change behaviors.

- 1 (not at all) (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (very) (5)

End of Block: Default Question Block

Live. Life. Healthy



Your opinion matters!

We are doing a study to get information about what patients feel could help them get healthy and stay healthy.

Please take a few minutes to fill out our survey, follow the link below or scan the QR code with your smart device.

<http://bit.ly/life1healthy>

You may be eligible to participate:

- Adults over the age of 18, of all genders, races, ethnicities
- Primary care patient within the Norton Healthcare system, seen at one of the participating NCMA locations
- Able to read English
- Have access to a smart device to access the electronic survey

For more information, contact:

Amanda Lyons
Researcher/Coordinator
Phone: 1-502-836-2148
Email: Amanda.lyons84@uky.edu



FOR APPLE USERS:
Open camera, point at QR code above and click on notification to open

FOR OTHER USERS:
Scan in QR reader app

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Appendix D

Provider Cover Letter

To Norton Community Medical Associates Providers,

You are being invited to take part in a survey about your opinions on the need for and use of a prevention practitioner in primary care. A prevention practitioner, as defined by Grunfeld et al (2014), would be an advanced practice registered nurse (APRN) who meets with patients at risk for or already overweight, who are at increased risk for chronic diseases based on exam findings by the primary care provider. During the extended visit the prevention practitioner would use an adaptation of the 5 A's model to *Ask* about current health behaviors, *Assess* readiness to change utilizing motivational interviewing, *Advise* a change and *Assist* in creating behavior change goals that are SMART (specific, measurable, achievable, realistic and timely). Lastly, the prevention practitioner would *Arrange* follow-up to monitor progress and make adjustments to the plan or goals as necessary. This role would be new to Norton Healthcare in an effort to assist primary care providers in addressing one of the Healthy People 2020 leading health indicators, weight status.

Although you may not get personal benefit from taking part in this research study, your responses may help us understand more about preventative services in primary care and how to better serve our patients. Some volunteers experience satisfaction from knowing they have contributed to research that may possibly benefit others in the future.

There is minimal risk of breach of confidentiality should there be a breach of electronic security. Please be aware, while we make every effort to safeguard your data once received on our servers via Qualtrics, given the nature of online surveys as with anything involving the Internet, we can never guarantee the confidentiality of the data while still en route to us. Your response to the survey is anonymous which means no names will appear or be used on research documents or be used in presentations or publications. The research team will not know that any information you provided came from you, nor even whether you participated in the study.

The survey will take about 6 minutes to complete. We hope to receive completed questionnaires from about 100 people, so your answers are important to us. Of course, you have a choice about whether or not to complete the survey, but if you do participate, you are free to skip any questions or discontinue at any time.

If you have questions about the study, please feel free to ask; my contact information is given below. If you have complaints, suggestions, or questions about your rights as a research volunteer, contact the staff in the University of Kentucky Office of Research Integrity at 859-257-9428 or toll-free at 1-866-400-9428.

Thank you in advance for your assistance with this important project. If you wish to proceed, click here <http://bit.ly/NCMAProviders>

PREVENTION PRACTITIONERS IN PRIMARY CARE

Sincerely,

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