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Primary Care Physicians' Participation, Knowledge, and Views of Nutrition Counseling for Weight Management

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Dissertation Submitted in Partial Fulfillment

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Abstract

An estimated 70% of the United States population is considered overweight or obese, which has led to an epidemic. Primary care physicians (PCPs) are considered the first line of defense to help fight obesity through weight management by providing nutrition care to patients. With little known about how PCPs engage with their patients on nutrition care combined with changing guidelines on treating obese patients, there is a gap in research on how PCPs help patients with weight management and what tools PCPs use to accomplish this. Guided by the health promotion model, the purpose of this qualitative study was to understand how physicians work with patients to address weight management through nutrition care. Sixteen physicians from the Midwestern United States were interviewed about their knowledge of nutrition and recent dietary guidelines as well as how they participate with patients on nutrition care for weight management. Data were analyzed using thematic analysis. The findings suggested that most PCPs are working with patients on nutrition care with various methods and gaining knowledge of nutrition from a variety of sources. Implications for social change include helping provide insight into tools physicians use to help patients manage their weight, which can translate to helping the general population become healthier through nutrition and weight management.

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Chapter 1: Introduction to the Study

Obesity around the world is at an epidemic level. The World Health Organization (WHO; 2020) indicated that the number of people identified as obese has tripled since 1975. The United States is a world leader in obesity. The Centers for Disease Control and Prevention (CDC; 2015) has reported a continuous rise in obesity rates over the last 40 years. Seventy percent of adults in the country are considered overweight or obese (CDC, 2015), and 65 million more Americans will be obese by the year 2030 (Wang et al., 2011).

Obesity is a main contributor to illness and mortality and has been linked to more than 200 diseases, including heart disease, Type 2 diabetes, certain types of cancer, hypertension, and sleep apnea (CDC, 2015; Jensen et al., 2014). The increase is obesity has led to higher rates of deaths by chronic illness (Aune et al., 2016), which account for nearly seven out of 10 deaths each year (CDC, 2015). With the rise in obesity levels in the next decade, life expectancies are predicted to decrease for the first time in history (Jensen et al., 2013). The quality of life for many Americans has been negatively affected by the health challenges created by obesity (Kolotkin & Anderson, 2017). Moreover, the rise in obesity-related illnesses has created a burden for the United States' health care system, including health professionals in primary care. Considering the obesity epidemic, the medical field must take actions and provide behavioral interventions to patients to help address the problem (Pool et al., 2012; Semlitsch et al., 2019).

The America diet is a major contributor to obesity and chronic disease (Eisenberg et al., 2015; National Health and Medical Research Council, 2013). The American

Medical Association (2013) indicated that obesity should be considered a chronic disease. Lifestyle modifications including nutrition care are considered the main ways of treating obesity and obesity-related illness and can have a positive impact for overall health (Adams et al., 2016). Poor diet habits and the ensuing poor health have led to research into how medical practitioners provide nutritional counseling to overweight and obese patients. Given that nearly 85% of adults see a health professional, primary care professionals (PCPs) may be best able to help patients manage their weight (CDC, 2017).

Nutrition care can be described as behavioral counseling by medical professionals, which could induce positive clinical weight loss in overweight and obese patients (Wadden et al., 2014). PCPs who have addressed obesity with overweight patients have had a positive impact on their patients' weight management (Post et al., 2011). When PCPs engage in individual counseling and have meaningful discussions on nutrition, their patients are more likely to engage in lifestyle modifications, including a healthier diet for weight loss (Rose et al., 2013; Smith et al., 2011). However, there is limited research on how PCPs are providing nutrition care and where they are receiving their knowledge for treating patients (Sturgiss et al., 2017). Indeed, more research is needed on how PCPs are working with patients on nutrition care with new dietary guidelines for the treatment of obesity (Djuric et al., 2017).

This chapter includes an overview of the previous literature on PCPs' participation with patients on nutrition care, as well as PCPs' views on adapting to new guidelines for weight management. In addition, this chapter includes the problem statement, purpose of study, framework, definitions, and research questions, and

concludes with the theoretical framework, nature of the study, and significance for the research.

Background

More than two thirds of the adult population in the United States is overweight or obese (Yang & Colditz, 2015). Adult eating habits and lack of nutrition knowledge has played a large role in the epidemic of obesity and nutrition-related illness. Obesity is now included as a chronic disease, and new guidelines on treating this disease from several health organizations show an effort to increase addressing obesity during primary care visits. Nutrition care during primary care visits can be an important component in patients' overall health and prevention of disease. Gaining knowledge of better food choices and participating in a nutrition counseling from medical care providers is essential to weight management (Endevelt & Gesser-Edeslburg 2014). Nutrition care for weight management should be addressed in primary health care (Bornhoetft, 2018; Hayes et al., 2017). PCPs have reported that managing their patients' weight is a part of their role in fighting obesity to improve overall health (Jensen et al., 2014). As such, through effective nutrition counseling by PCPs, patients can start to change and maintain more healthful eating habits. When doctors discuss obesity, their patients are more likely to show a weight loss effort, which suggests addressing the patients' weight concerns can be a gateway to discussing nutrition and future dietary habits (Pool et al., 2012). Nutrition counseling is a part of best practice guidelines to prevent obesity and chronic illness, so continuing education for physicians is becoming an important factor in providing effective nutrition counseling for patients (Bray et al., 2013; Crowly et al., 2012).

Evidence supports the implementation of new treatments for health outcomes, including nutrition care for weight management. The U.S. Preventive Services Task Force (USPSTF) updated its dietary guidelines in 2012 and in 2018 and recommended that physicians provide interventions for overweight patients (as cited in Leblanc et al., 2018*).* The Center for Medicare and Medicaid Services (2014) also adopted new guidelines for medical professionals, including PCPs to approve intense behavioral counseling for patients who were obese. The Obesity Medicine Association included nutrition therapy and counseling as part of their treatment for patients (as cited in Segar et al., 2017). These new guidelines were proposed by doctors and scientists who reviewed up-to-date evidence for overall health from nutrition care for patients. These updates have created challenges for PCPs in the treatment of obesity (Chan et al., 2017). There appears to be a gap between PCPs' ability to provide nutrition counseling and their knowledge of evidence-based nutrition research and the current guidelines (Crowley et al., 2016; Seger et al., 2017). The changing dietary guidelines for weight management and nutrition care can be confusing to medical professionals and can add to the already long list of obstacles to helping patients.

Among the barriers for PCPs are their lack of knowledge and confidence in nutrition, limited time during visits, and low expectations of patients (Mogre et al., 2016). New guidelines for nutrition care for supporting obese patients can be confusing for PCPs, which may lead to low adherence (Antognoli et al., 2014). Several studies have shown a low rate of PCPs participating in nutrition care in daily practice (Bornhoetf, 2018; Smith et al., 2011). PCPs have a limited understanding of how to provide nutrition

counseling and provide evidence-based care for weight loss to obese patients (Turner et al., 2018). Devries et al. (2014) stated that it is imperative to reevaluate the preparation for physicians to confidently provide nutrition care. By providing future physicians with the training and tools to fight obesity, health care workers can lower patients' chronic illnesses and medical costs (Roberts et al., 2015). Physicians' understanding of guidelines or dietary recommendations is unknown, as well as where they obtain current training or information on nutrition and weight management. Thus, further research is needed to assess how PCPs can help improve patient outcomes (Khandelawl et al., 2018). In this study, I examined PCP knowledge of nutrition care, the changing guidelines of treatment, and how they participate in nutrition counseling with their patients. The results from this study identified more clearly what PCPs know about nutrition care, how they obtain the information and knowledge they use, and how they engage with their patients on weight management. From this base of information, the medical field can provide not only ongoing new research but also continuing education best suitable for PCPs to use to address obesity with clients through nutrition counseling.

Problem Statement

PCPs are well-positioned to help manage obesity through nutrition counseling, just as they do other chronic health problems (Campbell-Sherer, 2016). However, Antognoli et al. (2014) found a low to moderate rate of dietary counseling in the primary care field. Kraschnewski et al. (2013) showed evidence of a decrease in physicians' counseling of patients on nutrition care for weight management over the past decade. Bornoeft (2018) found that physicians have an inconsistent approach to weight

management and several obstacles to implementing nutrition care to their patients. Foremost is that physicians lack the education and training needed to participate in nutrition counseling for weight management (Sonntag, 2012). The fight against obesity could be improved by PCPs addressing nutrition care as part of weight management for their patients; however, the guidelines for PCPs' interaction are misaligned with what is taking place in patient care (Sturgiss et al., 2018). More research is needed to understand how PCPs are providing nutrition care to patients and help identify obstacles in PCPs' commitment to provide nutrition care.

Although several organizations have suggested that PCPs should be engaging in weight management and nutrition care, PCPs lack the knowledge, skills, and training for addressing nutrition with patients (Hebert et al., 2012; Lewis & Gudzune, 2014). Time constraints and false perception of overall knowledge of nutrition also present obstacles (Cass et al., 2014; Van Dillen et al., 2013). Furthermore, doctors' confusion over the changing nutrition guidelines and recommendations can make it difficult to properly counsel and assist patients' weight management efforts (Morris, 2014). PCPs are struggling to provide nutrition care to patients, but there is little consistency on how they should best work with patients on weight management.

Moreover, little is known about where PCPs obtain their knowledge of nutrition counseling and what is being delivered to obese patients during office visits. Patients need specific, well-researched instructions on how to promote weight management from their PCPs (Han et al., 2016). However, it is unclear how physicians use validated tools for PCPs, such as the Rapid Eating Assessment, to help nutrition counseling (Plourde &

Prudhomme, 2012). More resources and tools provided to patients during PCP visits can have a positive impact on patients (Petrin et al., 2016). Williams et al. (2016) indicated that a patient-centered approach with a tailored assessment and plan could be beneficial to obese patients, but PCPs have limited knowledge about the current guidelines for nutrition care for those who are obese (Antognoli et al., 2014; Kahan, 2018). The lack of physician education and knowledge combined with inconsistency in research-driven approaches to weight management have made it difficult to gauge how physicians are working with patients on providing nutrition counseling.

Purpose of the Study

The purpose of this qualitative study was to explore PCPs' knowledge of and views on counseling their patients on nutrition for weight management. In addition, I investigated from where PCPs obtain their knowledge about nutrition care and the challenges they face with new guidelines on treating obesity. The findings can support an overall understanding of how PCPs are working with patients to fight obesity and help identify gaps between guidelines and actual care of patients.

Ideally, PCPs could provide nutrition counseling for weight management to support their patients' fight against obesity. However, many doctors have a lack of training in nutrition, lack appropriate staffing, and lack of confidence in giving nutrition advice (Sonntag et al., 2011). PCPs who participate in nutrition counseling have identified their own lack of nutrition education, as well as patients' lack of interest in receiving nutrition care (Nair & Hart, 2018). These challenges make it difficult for PCPs

to understand how and if nutrition counseling is being used in the best interest of the patients' weight control.

Research Questions

Research Question (RQ)1: What nutrition counseling for weight management do PCPs provide to their patients?

RQ2: Where do PCPs obtain their knowledge of nutrition and current guidelines for weight management?

RQ3: What are PCPs' current views on the guidelines to treat patients on weight management?

Theoretical Framework

The theoretical basis for this research was Pender's health promotion model (HPM), which relates patients' experience with health care professionals' influences in shaping health behavior. The HPM is an appropriate conceptual framework for health and diet interventions from a primary care setting. This model focuses on several constructs, including the perceived benefit of a behavior, barrier of a behavior, self-efficiency, prior behavior, situational influences, and committing to an action plan (Pender, 2011). The HPM is based on self-efficacy, environmental factors, and how individuals learn to change their previous behavior to promote better health and well-being (Pender, 2011). (Bottorff et al.; 1996) argued that patients have personal characteristics and experiences from health care professionals that can impact their future actions. The model framework includes the individuals' overall social, biological, behavioral, and psychological factors that can help predict healthy outcomes such as weight management (Pender, 1996). The

purpose of this study was to understand how PCPs are working with and influencing patients on weight management and where they obtain their knowledge and insights into nutrition care. For that reason, I used the HPM to understand how behavioral changes for patients can have a positive impact on weight management through nutrition counseling, thus helping the fight against obesity. The concepts of this study included how PCPs perform nutrition care for patients and from where this knowledge and training come. The PCPs' views on new guidelines and overall care were addressed in the final research question.

Nature of the Study

In this qualitative study, I explored how PCPs counsel their patients on nutrition care for weight management. I also studied where these PCPs are obtaining the nutrition and guideline information they are advising for their patients and their views on treating patients for obesity. According to Maxwell (2008), qualitative researchers have a broad, in-depth, and complex look into a phenomenon—in this case, PCP experiences with patients as well as their own beliefs on nutrition and dietary counseling.

This research was carried out through a case study format. Gammelgaard (2017) defined a case study as an empirical inquiry with a real-life evaluation of a particular phenomenon. In this case study, I conducted semi structured interviews with 16 PCPs who were working with patients on weight management through nutrition counseling in hospital and clinic settings in the Midwest. Interviews were recorded and transcribed for qualitative analysis. The data were analyzed by identifying similar links and themes while building an explanation from the cases.

Definitions

Nutrition care: Intensive behavioral interactions on dietary choices that can lead to climically signiciant weight management (Cash et al., 2015).

Obesity: A body mass index (BMI) of 30% or greater, calculated as weight in kgs divided by height in meters squared (National Heart, Lung, and Blood Institute, 1998).

Overweight: A BMI of 25.0% to 29.9% (Flegal et al., 2010).

Weight management: The proactive management of diet, fitness, and healthy behaviors conducted by an individual (Winik & Bonham, 2018).

Assumptions

In this study, it was assumed that PCPs see overweight and obese adult patients. Another assumption was PCPs' ability to recall accuracy of weight loss information. A further assumption was the participants in the study would provide honest and reliable responses in their interviews.

Delimitations/Scope

I delimited the scope of the study to only PCPs in hospital and clinic settings. The study excluded other health care professionals in this setting to focus on PCPs because new guidelines from health organizations on the treatment of obesity indicated that PCPs should be addressing patients' weight management. The scope of the study was PCPs in the U.S. Midwest who received similar training and education in medical school.

Transferability was addressed in the study by analyzing the data collected with previous research on the topic of each research question presented. The new data were

coded and matched with past research studies to help determine validity as the new data should build upon recent research on similar topics. PCPs who receive further continuing education in nutrition is detailed in Chapter 4.

Limitations

One limitation was the small sample size, restricted to PCPs in the Midwestern United States, which could impact data generalizability; however, all PCPs follow the same path for schooling and board exams, so education and training should be similar for all PCPs in the United States. Other limitations included the interview data being from each PCP's memory of their own experience with patients. Also, the data may have been misinterpreted during the data analysis. For this reason, I reviewed all transcribed data for accuracy and performed member checks and follow-up with each interviewee to ensure the participants' answers were interpreted with accuracy. In addition, my own experience, expertise, and bias could be another limitation. These limitations and measures to manage them are addressed in Chapter 3.

Significance

Obesity is the largest contributor to a patient's overall health and morbidity (Jansen et al., 2015). Because of this, physicians should address weight management even when it is not the primary reason for the patient's office visit. In fact, the U.S. Preventive Services Task Force argued that doctors should screen all adults for obesity and provide these patients with counseling and behavioral treatments to help fight obesity (Frühbeck, 2012). The American Heart Association (2013) also updated its guidelines for PCPs to assess patients for obesity and treatments, such as lifestyle interventions including

nutrition care. Although such efforts by health care organizations have been undertaken to establish healthier lifestyles, including nutrition care for patients, it appears that PCPs have limited information on diet and nutrition information to recommend to patients (Arora et al., 2015). There appears to be a discrepancy between new treatment guidelines and what nutrition care PCPs may be providing to patients.

Medical schools and continuing education can be positive influences on this discrepancy. Residency physicians have indicated a need to make improvements in education and training for addressing nutrition with patients (Lenders et al., 2014). Ball et al. (2016) argued that doctors would benefit from participating and acknowledging current research in providing health care and nutrition counseling to patients. Many current and future PCPs may not have the knowledge or ability to keep up with all the new research and recommendations on how to address obesity through nutrition counseling. Residents in primary care have expressed frustration in their lack of education and training for offering impactful nutrition advice to patients (Antognoli et al., 2017). This case study is significant because it can establish a baseline on PCPs' experiences in nutrition counseling and where they obtain the knowledge and tools. The medical field can then establish additional resources and trainings from the base of knowledge.

Summary

Poor diet habits have contributed to the obesity epidemic, even with updated guidelines for PCPs to help treat patients who are obese or overweight. According to new treatment guidelines for obesity, health care professionals including PCPs should provide

weight management through nutrition care to help fight obesity. Although PCPs are in a substantial position to help combat obesity, there is limited evidence of how PCPs are providing nutrition counseling to their patients to help with weight management. This gap in research was addressed through this qualitative case study. The theoretical framework of the study was Pender's HPM to determine how the physicians influence patients' behaviors in managing their weight. I explored PCPs' knowledge of and views on counseling their patients on nutrition. PCPs' awareness on guidelines and where they obtain their information on nutrition care were also researched. In Chapter 2, I review research on PCPs' knowledge of and training in nutrition as well as how they are currently addressing the obesity issues in their practices.

Chapter 2: Literature Review

Introduction

Obesity has been identified as a major health crisis in the 21st century (WHO, 2020). The number of people who have been identified as obese has nearly tripled since 1975, and close to 40% of adults worldwide are considered overweight (WHO, 2020). The CDC (2015) has reported that obesity rates have risen each decade and are contributing to most major illnesses. This epidemic is not only costing health care providers a large burden but is making the population ill.

The United States is the leader in obesity worldwide. The CDC (2016) has reported that more than 70% of the adult population is considered overweight or obese. Obesity is considered a contributor to more than 200 illnesses, many of which can be life-threatening (CDC, 2014; Jensen et al., 2014; Kolotkin & Anderson, 2017; Walls et al., 2012). By the year 2030, it is predicted that 65 million additional Americans will be obese, costing the U.S. health care system almost $70 billion a year (Hayes et al., 2017; Wang et al., 2011). Considering these predictions, obesity may be the most relevant health issue in the United States.

What Americans eat on a regular basis is a major component in the rise of obesity. The National Health and Medical Research Council (2013) concluded that poor diet habits have contributed to the obesity epidemic, despite updated guidelines and research on healthier diets. Adults who suffer from obesity or obesity-related illnesses may seek help from their PCPs, who are viewed as the first line of defense to address obesity and obesity-related illness in a medical setting (Bowen et al., 2019).

The clinic setting is ideal for promoting healthy changes. PCPs who addressed obesity with overweight patients had a positive impact on the patients' desire to lose weight (Post et al., 2011). When these PCPs have meaningful discussions on nutrition, their patients tend to engage in lifestyle modifications, including a healthier diet for weight loss (Rose et al., 2013). Thus, PCPs can help their patients live a healthier lifestyle through nutrition care, but such care may not be happening frequently enough. However, research has shown a low rate of PCPs' participation in nutrition care in daily practice (Bornhoetf, 2018; Talwalkar, 2016). Lack of training in nutrition, limited staffing, lack of compensation, low levels of confidence in giving nutrition advice, and low expectations of patients can be barriers to a physician giving advice about diet (Mogre et al., 2016; Smith et al., 2011; Sonntag et al., 2011). Failing to provide nutrition counseling is a missed opportunity to start addressing overall patient health in primary care (Shiffman et al., 2009). Indeed, physicians need to address obesity because obesity is the largest contributor to negative overall health and morbidity (Jansen et al., 2015). Without further education and management strategies in primary care, the obesity epidemic will continue to be a major issue in the United States.

One major obstacle to PCPs understanding how to engage in nutrition counseling is the changing dietary guidelines on nutrition care. New guidelines for nutrition and supporting obese patients can be confusing for PCPs, which may lead to low adherence (Antognoli et al., 2014). For PCPs who are encouraged to address obesity, there is no recognized resource or evidence-based approach for nutrition care. Thus, a more

proactive, systematic, team-oriented approach is needed to treat obesity (Hayes et al., 2017).

More research is needed to help health care providers, specifically PCPs, understand best practices for treating obesity and weight-related health. Bowen et al. (2019) suggested that researchers should explore how participants in primary care including PCPs work with their patients on nutrition care and understanding of health care policies including updated guidelines. In this literature review, I explore the obesity epidemic, PCPs' role in fighting obesity through nutrition care, and how and where PCPs obtain information they are using to help patients combat obesity. The chapter concludes with a recent history of new guidelines for nutrition care in treating obesity.

Literature Review Strategy

Information for the literature review was gathered from journal articles, books, and dissertations. A literature review search was conducted using electronic databases, including Google Scholar, Proquest, and Pub Med, resulting in peer-reviewed articles in conjunction with a variety of terms related to this study. The search for literature was focused on the past 5 years but considered literature up to 15 years previously, given its importance and to indicate how trends and the subject matter has progressed. Keywords included *doctors* and *primary care physicians,* along with *weight management, nutrition counseling, dietary guidelines,* and *obesity* in various combinations. The literature gathered from the search was evaluated for the topic and methodology of the study. Themes that emerged from the research included PCPs' knowledge of nutrition, doctors' training in nutrition, physicians, and dietary counseling, delivering dietary counseling to

patients, health care education of nutrition, evidence of lack of training for current and future physicians, and nutrition intervention based on the HPM.

Theoretical Foundation

PCPs can play a vital role in fighting the rise in obesity using health promotion methods to impact weight management. Pender's (2011) HPM was designed to explore health care professionals' ability to influence and impact patients' behaviors to increase overall health. Pender's HPM can be used to predict effective factors in promoting healthy behaviors as well as barriers to promoting overall health (Kamran et al., 2014). This model can help evaluate the effectiveness of PCPs' efforts to influence patients' weight management during office visits. This educative model should be used by health care professionals to increase healthy behaviors especially when it comes to nutrition care (Khodaveisis et al., 2018. The HPM also provides insight in how PCPs help promote healthy eating habits through nutrition counseling to help patients manage their weight.

The HPM attempts to evaluate the interaction of patients' interpersonal thoughts and how they react to their physical environment (Pender et al., 2006). Pender (2011) suggested that the model provides insights into the way patients learn how to improve their health and then start to promote changes to achieve better health. The model framework includes the individual's overall social, biological, behavioral, and psychological factors that can help predict healthy outcomes (Feetham et al., 1996).

Three major components of the revised HMP model (Pender et al., 2011) help influence healthy behaviors: a person's own characteristics and experiences; self-efficacy and the individual's perceived benefits and barriers of actions; and behavioral outcomes

and desired health behavior, such as committing to an action plan. Individual characteristics and experiences can include circumstances such as biological factors as in family history of illness. Sociocultural factors can include specifics such as demographic factors. Perceived benefits and barriers can include perceived advantages of changing to a positive lifestyle behavior as well as perceived risk factors and consequences of modifying certain behaviors.

Self-efficacy is a person's ability and strength to complete a task or accomplish a goal (Ormrod, 2006). The self-efficacy construct was developed by Bandura in 1977 to help establish the control patients have in changing behaviors (Bandura, 1982). The goal of health promotion is to influence changed behaviors in patients to move as close to optimal health as possible. Pender's HPM model was first introduced as a tool for health professionals in helping to predict health behavior in patients such as nurses' cognitive influence on patients' exercise habits (Lee, 2001). Pender built on Bandura's social cognitive theory to help explain and predict behaviors that may promote a healthy lifestyle.

The HPM model (Pender, 2011) can help understand how PCPs are participating and influencing patients with nutrition care for weight management. By using this model, I designed this study to help identify a deeper insight into how PCPs can improve patients' fight against obesity, thus improving health outcomes. PCPs' participation in nutrition counseling can lead to behavioral changes in patients, resulting in a positive weight management, which can lead to better overall health.

Promoting healthy behaviors such as managing patients' weight through nutrition counseling is a major concern for health professionals. The findings from a study reviewing the impact of the HPM showed that this is an effective model to provide information for interventions and to develop research for improving patients' health-related behaviors (Heydari & Khorashadizadeh, 2014). These authors also posited that the HPM model is an appropriate theoretical framework for researchers studying how to improve overall health.

Obesity Epidemic

The WHO (2016) indicated that the number of people who are identified as obese has over doubled since 1980. This is consistent with a CDC (2015) report on a steady increase in obesity rates the last few decades. Obesity has been linked to more than 200 diseases including heart disease, Type 2 diabetes, some cancers, hypertension, and sleep apnea (CDC, 2015; Jensen et al., 2014). The obesity epidemic has significantly increased the rate of deaths by chronic illness (Aune et al., 2016). For the first time in history, life expectancies are predicted to decrease instead of increase, which could be a result of health challenges related to obesity (Jensen et al., 2013). The obesity problem is worldwide, and the United States is leading the way. Approximately two out of every three people in the United States are considered overweight or obese (Yang & Colditz, 2015). In their research, Jensen et al. (2014) found that as many as 80 million people in the United States are obese, and almost 80% are overweight, with health care costs nearing $150 billion annually as a direct result of this health problem. The health

challenges are not only impacting American's life expectancy but also making an impact on the quality of life in the country (Kolotkin & Anderson, 2017).

Weight control can be vital to one's overall health and well-being. Americans' eating habits and lack of nutrition knowledge has affected the obesity epidemic and nutrition-related illness that accompany it. What Americans eat is the major contributing factor in controlling obesity and overall health (Eisenberg et al., 2015; National Health and Medical Research Council, 2013). Dietary factors are the most important aspect when it comes to illness and premature death in the United States (Murray et al., 2013). For example, diabetes, which has increased over 60% in recent decades, is often treatable with effective weight loss (Murray et al., 2013). The unhealthy foods Americans eat contribute to obesity, but a positive change in eating habits can help to restore a person's health. Researchers can address the obstacles and inconsistency that health professionals and the public face when determining what to eat to maintain a healthy lifestyle.

Weight Management in Health Care

The U.S. health care system could be key in addressing the issue of obesity in this country. The American Medical Association (2013) declared obesity as a chronic disease that enables the medical field to help address this health concern. Approximately 86% of adults visit a physician each year (Ashman et al., 2019). Physicians and other health professionals are typically considered at the forefront of delivering nutrition care for managing weight to patients; however, this interaction has been underused because of physician time constraints and their perceived overall knowledge of nutrition (Cass et al., 2014; Van Dillen et al., 2013). Many PCPs lack the specific education and training on

healthy nutrition and how to provide counseling to patients (Morris, 2014), and there is little consistency in PCPs' recommendations for dietary interventions or how they work with patients on weight management (Arora et al., 2015). Thus, obesity management in health care is complex and difficult.

New goals have been established for medical professionals to aid in the treatment of obesity. One example is nutrition counseling by health professionals, which was included in the Healthy People 2020 and new set goals were set for Health People 2030 (Griffith, 2021). These interactions have been shown to lead to health improvements. Aspects of nutrition care can include assessments, counseling, referrals, and direct dietary advice. Starting in 2000, the National Heart, Lung, and Blood Institute recommended that all health providers provide support and guidance to overweight patients to aid them in establishing weight loss goals and losing weight. The USPSTF (2003) adapted guidelines for a variety of preventive measures that physicians can employ, such as screening all patients for obesity and offering nutrition care and counseling to combat the obesity epidemic. In a move to help physicians and patients address obesity during a doctor's visit, the American Care Act approved a provision that eliminated patients' out-of-pocket costs for obesity treatment, including initial screenings and nutrition care. The Center for Medicare and Medicaid Services (2011) has also claimed that obesity treatment can be a billable service for physicians, and it has encouraged behavioral therapy as an option. In 2010, the USPSTF recommended screening all adults for obesity and recommended that PCPs refer patients with a BMI of 30 kg/m^2 or higher to intensive, multicomponent behavioral interventions. The American Heart Association (2013) updated its guidelines

for primary care providers to assess patients for obesity and treatments, such as lifestyle interventions. Care providers should provide nutrition care for weight management during routine office visits (Bornhoetft, 2018). All these efforts in the health care community have been looked upon to have a positive impact on patients' weight management.

Despite the recommendations that PCPs provide patients nutrition care, most patients do not receive obesity screening, diagnosis, or nutrition counseling (Bleich, 2011). Xiao (2009) stated that, based on the new guidelines, doctors need to provide more nutrition advice and support for their patients. Still, there is a low level of preventative care and insufficient emphasis on doctors addressing nutritional needs and a lack of evidence-based guidelines to give their patients for weight management. The National Institute for Health and Care Excellence (2014) stated that physicians and other health care providers should provide weight loss programs and behavior treatment to help fight obesity.

An important focus in health professionals' preventive care of chronic illnesses is working with patients using current knowledge along with evidence-based interventions PCPs and other health care professionals should be able to provide adequate nutrition advice, as this reduces the risk of patients developing chronic conditions (Maderuelo-Fernandez, 2015). In their study of health care provider knowledge of diets and nutrition, Arora (2015) found health care providers, including PCPs, had limited or incorrect information when it concerned what to suggest to patients. As organizations update

guidelines on treating obesity, there appears to be a disconnect on physicians' knowledge and how they interact with patients.

Physician Education

PCPs spend many years in school, including 4 years of medical school and several years in residency. Adams et al. (2010) found that, on average, medical students had fewer than 20 hours of nutrition education during their 4 years in medical school, and most of this education was in basic courses, with few implications for everyday care of patients. Bruer et al. (1994) concluded that PCPs have not been given adequate education in the field of diet and nutrition to help patients fight obesity. There is a limited amount of nutrition information being taught in medical schools (Shils, 1994). A more recent study found that over 70% of medical schools provide less nutrition education than is required (Adams et al., 2015). PCPs' education and training in medical school can be an important part of working with obese patients.

The lack of education for PCPs on nutrition for weight management has led to changes in guidelines and curriculum for future doctors. Crowley et al. (2015) stated that almost 60% of medical students thought that their education in nutrition was insufficient. Spencer et al. (2006) revealed that medical students' confidence in nutrition declined every year they attended medical school. The findings suggest that less than a quarter of 4th-year medical student students believed they had the training to successfully counsel patients on nutrition for weight management (Spencer et al. 2006). This lack of useful education in nutrition counseling given to medical students may play a role if PCPs

attempt to engage in nutrition counseling as well as how they work with patients on addressing obesity.

The decline in medical student confidence concerning nutrition care has led to changes in medical school objectives and the training of future PCPs. The National Nutrition Monitoring and Related Research Act (1999) mandated that clinical weight management and nutrition care be added to the core curriculum of medical students and residents. The Medical Licensing Examination (USMLE; as cited in Hark, 2006) updated its curriculum and testing to include more nutrition content so medical schools would incorporate more education in nutrition care. The purpose of this change was to increase nutrition education in medical schools because of a congressional mandate to increase the quality of education to help fight obesity as well as increase in the number of doctors counseling their patients on nutrition (Van Horn, 2006). The initiative of the NAA proposed new, creative, and evidenced based approaches to integrate nutrition care into the medical schools' curriculum; however, this plan has not been evaluated for effectiveness in general practice (Crowley et al., 2015).

The education PCPs receive may contribute to whether nutrition is addressed with their patients. Hark (2006) found that educators who support making time for nutrition education in medical school can increase the frequency of care given to patients. Nutrition courses integrated in medical school can have a positive impact on physician confidence in giving nutrition care to patients (St. Jeor, 2006). Heimburger (2010) indicated that PCPs should continue to be educated in new scientific approaches reflecting current research in nutrition to enhance their patients' ability to manage weight.

This continuing education should carry on after medical school, as new research in nutrition is always being done. Health care reform must include a more substantial attempt to train future physicians on nutrition to address new health system challenges that include obesity (Lenders et al., 2014). Dietary counseling for patients needs to be organized and assessed over all medical schools and residency programs because of the positive influence it can having on counseling patients (Khandelwal et al., 2017). Education on new guidelines on how physicians address nutrition with patients have continued to evolve and more research is needed to help explore the benefits to this care.

Physicians' Knowledge and Training of Nutrition Care

Once in practice, PCPs are in a unique position to work with patients on a routine basis to increase healthy outcomes. Devries (2014) concluded, however, that PCPs may be undertrained when it comes to nutrition care, which can be a major concern as poor diets and obesity play a large role in illnesses such as heart disease and diabetes. Kahn (2006) found that continuing education for nutrition is low among PCPs compared to most other health care workers, and it is these PCPs who could benefit the most from this knowledge. Morris (2014) stated that PCPs' lack of nutrition knowledge and training is a major concern for addressing obesity in primary care. Researchers have pointed to PCPs' lack knowledge of randomized controlled studies of nutrition and literature about managing patient weight and training on nutrition care guidelines to promote weight loss (Arora et al., 2015; Geller et al., 2018). On the other hand, ongoing nutrition education in medical school can relate to a higher rate of nutrition care from physicians (Crowly et al., 2016; Nestle & Baron, 2014). Nutrition care education is essential in improving PCPs

engagement in treating patients (Aggarwal et al., 2018). Continuing education in nutrition care could be effective in helping PCPs gain the knowledge and training needed to help patients fighting obesity.

Physician Nutrition Counseling

Participation in Counseling

Ideally PCPs would be the initial defense against disease and, in the general practice setting, the facilitators of dietary guidelines and nutrition counseling **(**Ball el al., 2010). PCPs engagement in nutrition counseling is a best practice for helping the fight against obesity and chronic illness. By addressing patients' behavioral choices, including eating habits and diets, physicians can help prevent many chronic illnesses. Yet evidence has suggested PCPs are not engaging in nutrition care as often as health organizations' guidelines suggest. Kushner (1995) helped to start a review of PCPs' participation efforts, knowledge of nutrition care, and barriers that limit this specific care during patients' visits. Data from 1996 to 2008 showed a significant reduction in weight-related nutrition counseling for overweight patients by PCPs (Kraschnewsk et al., 2013). Only approximately one in three PCPs provide dietary counseling for patients (Anis et al., 2004). According to Kraschnewski et al. (2013), nutrition counseling by PCPs has decreased significantly since the mid-1990s, while obesity levels have increased dramatically during this time frame. Khandelwal et al. (2018) found that internal residents who were training to be physicians reported a low nutrition counseling rate of 22%, a rate unchanged over the previous decade. The decrease in PCPs participating in nutrition counseling could have a significant impact on patients' weight management.

Overweight and obese patients can benefit from direct nutrition counseling from health care professionals including PCPs (Rose et al., 2013). Many PCPs have made only a limited effort to discuss nutrition with patients or provide nutrition counseling (Bock et al., 2012, Tai-Seale, 2008; Ma et al., 2009). McAlpine and Wilson (2007) found that only around 5% of patients were receiving nutrition care from their PCP. Similarly, Kraschnewski et al. (2013) indicated patients seen in 2007 and 2008 had a significantly lower chance of receiving weight loss counseling than a decade earlier. While obese patients are visiting their PCPs more often, the decrease in nutrition counseling during these visits may indicate a missed opportunity to help patients live a healthier lifestyle.

In contrast, even with the overall decline in nutrition counseling, some PCPs engage with their patients about nutrition to support weight management. Ahmed (2016) found a moderate increase in the frequency that patients receive nutrition care from their PCP in the past few years. Smith et al. (2011) concluded that most PCPs typically offer some type of intervention for weight management; however, most of the interventions do not offer nutrition guidelines or recent research to assist overweight patients. One key component of the lack of useful care for patients is the confusion in assessing which patients need specific nutrition care and how to offer the most beneficial nutrition advice to patients (Smith et al., 2011). With mixed results on how often PCPs engage in nutrition counseling, most scholars believe that this form of care is not at a high enough rate.

Barriers to Counseling

There are many barriers to PCPs and patients working together on weight management through nutrition counseling. Brown et al. (2006) suggested that both PCPs

and their patients believe it is the patient's own responsibility to have a healthy lifestyle including weight management; however, patients want nutrition care from their PCPs that directly relates to their health and chronic illnesses. PCPs have the task of treating and preventing obesity, as they typically have a long-term supervision role of their patients' health. Barriers to counseling can include insufficient tools and skills, a lack of knowledge, a limitation of time with each patient, and the physicians' belief that they may not make a difference in their patients' behavior (Woodruff et. al., 2016). All these barriers may impact the ability and effectiveness of PCPs' efforts to help patients through nutrition counseling.

There is no perfect approach to working with patients on weight management. PCPs have limited effective weight loss interventions proven to work for all patients in the primary care setting (Haire-Joshu & Klein, 2010). Physicians have few resources that have been scientifically proven to enhance weight control, which may prevent PCPs from counseling patients on interventions for weight loss (Tsai et al., 2010). Kolasa and Rickett (2010) stated that a lack of practical tools is a major barrier for nutrition care. Physicians could benefit from universal resources and guidelines to help them provide nutrition care.

Communication and rapport between patient and doctor may impact the effectiveness of a visit. Most PCPs have a long-term relationship with their patients; however, many PCPs lack knowledge of nutrition and have trouble communicating effectively while working with patients on a regular basis (Cox et al., 2011). It is easier for some physicians to address weight-related issues with and counsel the patients who

have a strong rapport or who have been seeing the physician for an extended period of time (Phelan et al., 2009). PCPs' insufficient time with patients decreases the ability to provide adequate, evidence-based dietary guidelines to help patients working on obesity issues. Time constraints and the increase in health issues of patients in primary care visits can impact the amount of time physicians have to work with patients on nutrition care and dietary changes (Chen et al., 2009).

Both residents and current PCPs have indicated they are unable to manage their patients' weight and obesity issues for several reasons (Epling et al., 2011). Low levels of nutrition counseling could be due to the PCPs' feeling of being ineffective in making a difference for patients in their practice (Leverence et al., 2007). The decrease in nutrition counseling rates could also be attributed to the PCPs' frustration with patients who do not follow the recommendations or use the tools given to them (Ruelaz et al., 2007). PCPs delivering nutrition counseling has been shown to be effective in most cases; however, significant barriers may be impacting this opportunity to help patients with weight - related issues (Kraschnewsk et al., 2013). Rose et al. (2013) stated that policymakers need to consider patient-facing groups, including PCPs, for additional and ongoing training in nutrition concerning weight management.

Impact on Patients

The research on the outcome of patients receiving nutrition care for weight management has been mostly positive. Nutrition counseling by physicians has a significant impact on the dietary changes in patients (Wadden et al., 2013). Patients have a higher success rate of managing their weight when doctors address obesity with a focus

on nutrition and eating a healthier diet (Pool et al., 2014). Rose et al. (2013) reviewed 32 previous studies and found that health care professionals, including PCPs, who give nutrition care can positively impact their patients' ability to lose weight or to manage their weight. The review of studies suggested that even brief nutrition counseling sessions may play a role in patient weight. Pool et al. (2014) reported that when doctors discuss weight management, patients show significant weight loss.

Addressing patient weight concern can be a gateway to discussing nutrition and dietary habits. PCPs willingness to discuss nutrition advice and making dietary changes during patient visits may enhance the effort of these patients to become healthier. Patients who are directly counseled by PCPs on nutrition and weight loss are more likely to follow the advice and make dietary changes, compared to patients who are not counseled (Loureiro & Nayga, 2006). Obese patients were more likely to lose weight if the PCP first identified them as overweight and had a discussion on making dietary changes (Post et al., 2011). Nutrition advice from physicians can trigger patients to attempt weight loss strategies, which enhances the possibility of losing weight and improving their overall health (Lewis et al., 2013).

Some PCPs use behavior counseling for nutrition care to help improve patients' weight loss interventions during visits. PCPs' behavioral counseling can help patients manage or lose weight effectively (Rose et al., 2013). Maderuelo-Fernandez et al. (2015) indicated that physicians who conduct frequent nutrition behavioral counseling sessions can help their patients make moderate improvements in their day-to-day eating habits.

Physicians who use behavior nutrition counseling in a collaborative positive manner can initiate weight loss for most patients on a day-to-day basis (Pollak et. al, 2010)

Patients typically visit their PCP to help address illnesses that are a direct result of being overweight or obese. More than 50% of overweight patients were found to not receive any nutrition care or counseling from their PCP to help lose weight (Ko et al., 2008). Bleich et al. (2011) reported that obese patients, including ones with a higher risk of weight-related health issues, are less likely to receive nutrition care. Health care providers, including PCPs, could be missing opportunities to address obesity at an early stage. PCPs who experience barriers to helping patients manage their weight can look to outside resources to effectively treat obesity patients.

Referrals

PCPs who do not have the ability to perform nutrition care may have the option to refer patients to other health professionals, such as dieticians, to help obese patients (Crowley, 2012). Combining physician nutrition care and referrals, along with interventions in the community, and approved commercial weight-loss plans may be the best approach to fighting obesity (Hartmann-Boyce, 2015). Allen et al. (2015) stated that physician involvement in monitoring patients' obesity measurements is a small part of the referral process to weight management, and programs could add to the attendance and overall participation of patients. PCPs also show a higher rate of addressing nutrition if they have a referral option available to them (Wynn et al., 2010). Referring patients to dietitians could be a strategy for PCPs who do not think they can effectively help patients with nutrition.

Guidelines for Nutrition Care

Health organizations and medical practices updated guidelines for nutrition care as the obesity epidemic continues to rise. Nutrition counseling is a best practice for helping physicians treat obesity (Bray et al., 2013). The U.S. Preventive Services Task Force updated its dietary guidelines in 2012 and more recently in 2018, with guidance that PCPs should provide interventions for overweight patients (Leblanc et al., 2018). The Center for Medicare and Medicaid Services (2014) pushed for medical professionals including PCPs to participate in intense behavioral counseling for patients that were obese. The Obesity Medicine Association (as cited in Segar et al., 2017) included nutrition counseling as part of its treatment plan for overweight patients. While guidelines are being updated to help physicians treat obesity, there are questions into how these professionals are adapting to these changes.

PCPs can experience challenges with the implementation of new dietary guidelines and treatments for patients' health and weight management (Chan et al., 2017). There appears to be a gap between PCPs' ability to provide nutrition counseling and their knowledge of evidence-based nutrition research and the current guidelines (Crowley et al., 2016; Seger et al., 2017). The changing dietary guidelines for a weight management and nutrition care can be confusing medical professionals and can add to the already list of obstacles to helping patients.

Summary

PCPs can positively impact their patients' ability to manage weight. The evidence supports PCPs influence on patients through nutrition counseling to enhance their healthy

lifestyle (Post et al. 2011; Rose et al, 2013; Xia, 2009). New guidelines support the need for PCPs to engage in nutrition care with patients; however, there are many barriers to this form of medical care. Even with new guidelines for PCPs, there is a low level of participation in nutrition care during doctors' visits (Antognoli et al. 2014). The barriers to this support include lack of time during appointments for PCPS, lack of rapport with patients, and lack of training and knowledge in nutrition (Hebert et al. 2012; Morris, 2014; Shiffman et al. 2009). There is no established training for PCPs to work with patients on nutrition care, and how this counseling is taking place during appointments is unclear (Haire-Johnson & Klein, 2010; Tsai, 2010).

In addition to providing in this chapter a literature-search strategy and the conceptual framework of the HMB model, I examined the literature around PCPs' change in guidelines, knowledge of nutrition, education and training they receive, and barriers to working with patients on nutrition care. The purpose of this study is to examine how PCPs are working with their patients on nutrition counseling and from what resources they gain their knowledge and tools to help patients manage their weight. In Chapter 3, the methodology of the study, including the research design and rationale, as well as ethical issues are discussed.

Chapter 3: Research Method

Introduction

The obesity epidemic has reached epic proportions as the number of obese people in the world has tripled in the last few decades (WHO, 2020). Experts have now considered obesity a disease needing treatment from the medical world, including doctors participating in nutrition care for weight management (Fujiola, 2015). Studies have shown that nearly two-thirds of Americans are considered obese or overweight, as it is estimated that over 200 million Americans are fighting this epidemic (CDC, 2016). With over 200 major diseases being linked to obesity, health professionals in primary care are seen as the forefront to addressing obesity (Bowen et al., 2019). Obese and overweight patients should receive nutrition care in primary health care (Bornhoetft, 2018; Hayes et al., 2017). More doctors, specifically PCPs, need to consistently work with patients on nutrition (Petrin et al., 2017); however, there are many obstacles for PCPs to adequately participate in meaningful, supportive care for obese patients (Antognoli et al., 2016). There appears to be a lack of research on how PCPs work with patients on nutrition for weight management, as well as where these PCPs gain their knowledge of nutrition (Seger et al., 2017).

The purpose of this qualitative case study was to explore the experiences of PCPs working with their patients on weight management through nutrition counseling. Other areas explored included where PCPs obtain their knowledge of nutrition and guidelines to treat obesity. Chapter 3 provides an outline of the methodology for this research study and includes the purpose of the study, the design and its rationale, research questions, a

description of the interview procedures, and interview questions. The resulting information provides an outline for future data collection. Ethical issues and data collection are introduced in this section.

Research Design and Rationale

The following research questions were examined in this study:

RQ1: What nutrition counseling for weight management do PCPs provide to their patients?

RQ2: Where do PCPs obtain their knowledge of nutrition care for weight management?

RQ3: What are PCPs' current views on the guidelines to treat patients on weight management?

The central phenomenon of this study was the experiences PCPs have in providing nutrition counseling for weight management for patients on a regular basis. PCPs can play a vital role in fight against obesity, starting with addressing weight management to patients who are overweight or obese. These PCPs can address lifestyle changes, including nutrition counseling, to help patients create a healthier outcome. The USPSTF 2018 guidelines recommended that physicians participate in dietary counseling for patients because of the positive benefits in fighting obesity (as cited in Leblanc et al., 2018). There is little information on the experience of counseling sessions between physicians and patients or what is being delivered during appointments (Khandelawl et al., 2017).

One major issue for physicians' ability to deliver effective nutrition information to patients is the knowledge base gained in medical school and enhanced by continuing education. Research has shown an increasing recognition of physicians' lack of training in nutrition and lack of understanding of how to treat obesity and prevent illnesses associated with obesity (Adams et al., 2015). Because little information exists on how PCPs work with patients on nutrition, there is a need to have an overall understanding of how physicians gain their knowledge on nutrition care. Specifically, more information is needed about how PCPs treat obesity without significant training in medical school or postgraduate education (Lenders et al., 2014). In this study, I explored the personal experiences of physicians' participation in nutrition care and provided insight into where these PCPs are obtaining knowledge for treating patients. I also investigated PCPs' views on nutrition care in general practice and updated guidelines from health organizations in the treatment of obesity.

There are three major methods researchers use to create a study design: quantitative, qualitative, and mixed methods. A qualitative case study can be used to explore a specific phenomenon with a variety of data sources. In a qualitative study, the researcher conducts interviews with a small number of participants to understand their experiences. Qualitative case studies are valuable for health sciences researchers to evaluate programs and develop interventions for health care professionals (Baxon, 2008).

A qualitative study was chosen to gain the personal experiences and in-depth data from PCPs on how they influence patient weight management through nutrition counseling. This study approach allowed me to gain more insights on the experiences of

the PCPs on a day-to-day basis. I conducted interviews from a small number of PCPs who agreed to participate in the study. There are several types of qualitative designs, including case studies, phenomenological, and grounded theory studies. The case study model is best to use when the researcher wants to answer the "how" and "why" of a certain real-life phenomenon (Yin, 2017). In this case study, I explored how PCPs work with patients on nutrition care as well how they obtain their knowledge of nutrition.

Role of the Researcher

The role of researcher is to conduct the study without bias and to keep personal views and perceptions from impacting the research. Rights of all participants were protected. I minimized any outside variables or personal opinions on weight management and nutrition counseling by maintaining a journal of personal thoughts and perceived notions from the interviews; the goal was to remove potential bias. The researcher was also the interviewer. Any potential participant who had a relationship with me was not included in the study. My experience in working with PCPs and expertise in nutrition was minimized as much as possible during the study. Bracketing was used throughout the study and when analyzing the interview data to focus on only the presented information and suspend any judgment from the researcher (see Sorsa et al., 2013). Being aware of any potential bias during a qualitative study and eliminating the bias aided in obtaining data for intent of the research.

Participant Selection

For the purposes of this study, PCPs were full-time employees working in hospital and clinic settings from several states in the Midwest. The PCPs were expected

to see adult patients on a regular basis and be board-certified. Recruitment began with me contacting connections within the medical field who had access to PCPs. The first few participants were predominately local physicians and associates of my connections in local clinic and hospital settings. Because I focused on PCP experiences as independent practitioners, supervisor or site permission was not required. The search began in a midwestern metropolitan area; approximately one-third to one-half the total number of participants were from this area. The recruitment expanded to other midwestern states through referrals from these physicians. This can be explained as snowball sampling, which is a type of convenience sampling. Convenience sampling can be described as gaining participants in a study by accessibility and availability to the researcher (Sedgwick, 2013). To qualify for this study, the PCPs were required to see adult patients regularly and have completed residency. Years of experience as a PCP varied from subject to subject as well as how many years they had been at their current practice.

Sampling Strategy

The first interviewees included PCPs serving in local clinics and hospitals and who were among my contacts in the medical field. I obtained email addresses for PCPs from these contacts and connections in the medical field. Contact with PCPs was first made through email, and the prospective interviewees were sent the introductory email (Appendix A) along with the consent information Participants replied to the email giving their agreement to participate in the study after reading the consent form. After this agreement, interviews were scheduled for a convenient time for the participant.

After the first few interviews were conducted, I began using snowball sampling, which is a method of gaining further participants by asking the interviewee for a potential new participant in their network. This method essentially grows the sample size as if it were a snowball gaining size as it rolls (Suri, 2011). Snowball sampling made sense in this study, as most PCPs have a large network of colleagues, associates, and former students. Only PCPs who saw predominately adults were recruited. Demographic information was collected (Appendix B) before the interview questions were started. This provided time to build rapport with the PCP.

Sample Size

Sixteen PCPs were interviewed as saturation occurred. Saturation can be described as participants failing to add or detailing new information to enhance the understanding of the phenomenon. Typically, qualitative studies have been found to reach saturation in between six and 12 in-depth interviews (Guest et al. 2006). Participants are expected to share similar experiences in certain cases, which would gain saturation before or by the 12th interview.

Criteria for Participation in the Study

The PCPs met the criteria of having direct appointments with adult patients daily. The PCPs were required to be board-certified and licensed to practice medicine in their respective state and be currently employed. It was assumed the participants were board certified as this is a requirement to being employed at a clinic or hospital setting. Because it has been established that Americans have a high rate of obesity, it was assumed that PCPs would be interacting with patients who could benefit from weight management on a

regular basis. I asked questions about the personal experiences of the PCPs; their identity and place of employment were kept private to help with confidentiality. During the outreach email to prospective participants, confidentiality was addressed.

Instrumentation

Demographic information was collected during the phone interview. Demographic information included gender and age of the participant, how long they had been working as a PCP, and if they were employed in a hospital or clinic setting. Data were collected through interviews with a semi structured protocol asking open-ended questions. The same format of questions was presented to each participant; however, participants were given the opportunity to guide the conversation, a best practice for qualitative approaches. Interview questions (Appendix A) were developed from reviewing previous literature and discussions with current physicians on nutrition care for patients. An interview protocol was developed with follow-up questions for initial answers to the main research questions. Committee members, who had expertise in health psychology, reviewed the questions and approved the interview questions and protocol. I followed the same interview process with each PCP interview to enable establishing validity and deducing themes from codes to accurately describe PCP experiences. Participants were able to describe their own experiences and views on nutrition care for weight management as well as where they gained their knowledge of nutrition. Further questions addressed new obesity treatment guidelines for patient care. Follow-up questions for each individual question were asked to the participants with a natural flow.

Participants were encouraged to answer questions honestly and openly and were given the freedom to discuss what they felt was important in the topic questioned.

Participants had the right to end the interview at any time during the phone conversation. Participants could skip a question if they chose. The interview process took approximately 20 minutes, and the 16 interviews took place over a 2-month timeframe.

Procedures For Recruitment, Participation, and Data Collection

Semi structured, one-on-one, in-depth interviews with primary PCPs were conducted to understand how PCPs work with their patients on nutrition counseling for weight management as well as the strategies these doctors provided to patients. The interview included a series of questions and follow-up questions I developed to allow the participant to include any thoughts, insights, or experiences. The list of questions and follow-up questions are included in Appendix A. Interviews investigated where PCPs obtained their knowledge on nutrition, including new guidelines for the treatment of obesity in health care.

The interviews were scheduled within 4 weeks of the PCP's agreement to participate. Interviews were transcribed verbatim by a transcription service *REV Call Recorder*. After the interview, the transcription was checked to ensure accuracy of the data collection. Participants were emailed a copy of the transcription and asked if the information was represented accurately, as well as with if there were any questions or further comments they wanted to add. The participants had 15 days to respond to the transcript email to comment on the data. If no correspondence was returned from the email with the participants' transcriptions, I assumed the information was accurate. In the

transcript email, the participants were thanked for their participation and asked if they would like a follow-up conversation to the interview or study overall. All interviews were confidential and recorded material along with transcripts were considered confidential.

Data Analysis Plan

Data analysis can be described as taking data and transferring it into a story and gaining insight into the interpretation of the story. The audio and print interviews were reviewed a second time to obtain clear understanding of resulting themes, from which a summary was created. Coding can be described as data being reduced into groups of themes that explain the research questions of the study (Creswell, 2007). I used an Excel spreadsheet to manage and shape the data collected. Based on the data collected from the questions, I categorized each of the answers to the research questions presented. After analyzing each answer, I looked across the data to create themes. The thematic coding steps included immersing myself into the data, classifying the data according to the content, and finally identifying themes that emerged from the data. Analyzing the data started with taking each transcript and categorizing for concepts and then grouping each category to help address each research question. Codes were determined and identified for each interview question and linked to the three research questions presented.

I conducted the thematic coding, which was based on trends identified from the responses of the PCPs. I looked for common themes from physicians on their experiences working their patients on weight management. An example is physicians' inconsistency in where they obtained nutrition information. Finally, I identified themes of PCPs addressing weight management guidelines for treating obesity. The analysis of data

provided me with outlining themes during the comparative analysis. These themes and concepts were grouped into categories to address gaps in previous research to help understand patterns of PCPs' experiences. Discrepant cases or unexpected findings were attempted to be explained and used to identify outlining criteria to strengthen findings in the study.

To improve validity for this study, an outside researcher independently analyzed the data. She reviewed all transcripts and analyzed them through coding and then generated themes. The independent researcher used an Excel spread sheet to categorize the data and look for common findings for each research question. These themes were integrated to my findings to generate the final themes that are discussed in Chapter 4.

Trustworthiness

The semi-structured interviews were conducted over the phone to maximize availability and minimize burden for the PCPs. I personally conducted all telephone interviews. To ensure validity of the results in the data analysis, personal views and biases were not presented during the interview or study. I minimized outside variables or personal opinions on weight management and nutrition by maintaining a journal of perceived notions from the interviews to help reduce any bias. Bracketing was used when analyzing the interview data to focus on only the presented information. Self-reflexivity was exercised throughout the interview process for credibility and to minimize the researcher's own bias and thoughts and stay true to the participants' insight into the subject matter. Telephone interviews were recorded and then transcribed after the interview process.

I reviewed all transcribed data for accuracy and made any necessary edits to improve validity. Member checks were used during a follow-up with each interviewee to ensure the answers were interpreted accurately. Upon receiving the summary of findings, the participants were asked if the results accurately reflect their answers and experiences. Recording the interviews helped limit any factors that impacted the accuracy of the interviews such as distractions, note taking errors, and possibly researcher bias. Eliminating these distractions and transcribing the interviews improved confirmability (Elo et al. 2014). I provided a series of follow-up questions during the interviews to allow the participant to include any thoughts, insights, or experiences. The list of questions and follow-up questions are included in Appendix A.

I was responsible for data collection and data analysis. Trustworthiness was established by a committee member performing an audit for the coding and themes to help strengthen confidence in the results. A fellow researcher at Walden University with expertise in qualitative research was used for this analysis.

An external researcher from outside of the dissertation committee analyzed the data independently. These independent findings were integrated with my findings and addressed in Chapter 4 to help establish validity of the emergent themes. The data from the study was triangulated with previous research on the topic of each research question presented. Data were coded and matched with recent research studies to help determine validity as the new findings were to build upon previous research. For example, recent research on PCPs participation in nutrition care was evaluated with the themes that are presented by the findings given during the interview process.

Ethical Procedures

The study was designed to limit any harm to the human subjects or place of employment. Risks were minimal since questions were not sensitive or invasive; benefits include better understanding of PCPs experiences in working with patients to enhance future health outcomes for patients. The study followed ethical protocols and gained compliance with the institutional review board (IRB) guidelines.

Participation was voluntary, and privacy was assured for all PCPs who were interviewed. Participants and place of employment was kept confidential, and participants had the right to withdraw from the study at any time. The identity of the PCPs as well as the interviews were maintained with strict confidentiality. This information was included on the consent form participants filled out before the interviews. Data were kept in locked files during the study and protected by the researcher. The names were removed from each audio session and replaced with numbers to ensure confidentiality of each interviewee. The data will be destroyed after 3 years by the researcher.

Summary

This chapter outlined the methodology and research design, along with a rationale for the reasons qualitative research was used to collect and code the data collected. The PCPs in this study were chosen through convenience sampling and then snowball sampling. After initially being contacted the participants received a consent form to review before the interview. The phone interviews were recorded and reviewed to find common themes to help answer the research questions on nutrition counseling and how

physicians address guidelines for treating patients on weight management. Chapter 4 presents the thematic codes and analysis from the data collection.

Chapter 4: Results

Introduction

Physicians are in an ideal position to help patients with weight management (Campbell-Sherer, 2016). Overall, physicians have an inconsistent approach to nutrition care and experience several obstacles in working with patients on weight management, including lack of knowledge of nutrition and lack of resources for patients (Bornoeft, 2018). More examination of the barriers and ways to help support physicians in helping fight obesity is needed. The purpose of this qualitative study was to explore and examine PCPs working with patients on nutrition care for weight management and where they obtain their knowledge of nutrition care. The findings can help support physicians who are working with patients on nutrition care to help fight obesity. The following research questions guided the study.

RQ1: What nutrition counseling for weight management do PCPs provide to their patients?

RQ2: Where do PCPs obtain their knowledge of nutrition and current guidelines for weight management?

RQ3: What are PCPs' current views on the guidelines to treat patients on weight management?

This chapter includes detailed information on data collection. Demographic information of participants is described. Themes that emerged from the data are presented in detail. The IRB approved the study (#02-23-21-0057437).

Pilot Study

After IRB approval, two practice interviews were performed with physicians a week prior to starting the interview process. The purpose of these interviews was to gain comfort with the interview process and recording and to test the protocol to ensure ample information was collected to address the research questions. No changes to the protocol were needed after the piloted interviews. Sixteen physicians participated in the main study, and all interviews were recorded and transcribed.

Demographic Information

Of the 16 physicians, 10 were female. Nine indicated that they worked in a hospital setting, while seven indicated they worked in a clinic setting. Most of the participants (63%) were over the age of 40. Most participants (75%) reported having over 10 years of experience being a physician.

Table 1

Participant Characteristics

Participant #	Age category	Gender	Years of experience	Setting
1	41-50	M	>10	Clinic
2	31-40	M	21-30	Clinic
3	41-50	F	>10	Hospital
4	31-40	F	11-20	Clinic
5	31-40	F	11-20	Hospital
6	31-40	F	11-20	Hospital
7	41-50	F	11-20	Hospital
8	41-50	M	11-20	Hospital
9	41-50	F	11-20	Clinic
10	31-40	M	>10	Clinic
11	>30	F	>10	Clinic
12	41-50	F	11-20	Hospital
13	<50	M	21-30	Hospital
14	41-50	F	11-20	Hospital
15	<50	M	21-30	Clinic
16	41-50	F	11-20	Clinic

Data Collection

Data were collected from 16 physicians. After receiving the initial email with the consent form, each participant responded to the email with "I consent." At this time, they filled out the demographic information and set up a time for the phone interview. Demographic information included sex, age, whether they worked in a hospital or clinic setting, and years as a physician. Interviews were completed over the phone, and each was recorded and transcribed. Participants were reminded of the information on informed consent for participation along with being reminded the interview was being recorded. Each interview included the same series of questions described in Chapter 3. Each interview lasted approximately 20 minutes. The recordings were transcribed for data analysis and purposes of member checking and analyzed to help establish credibility. Participants were asked three separate comprehensive questions based on the research questions established for the study. Each question had one or two follow-up probing questions as described in Chapter 3 (see Appendix A).

Data Analysis

Initial codes were based on the protocol. Transcribed data were read multiple times to help ensure accuracy and to start identifying initial codes and themes. The responses from each transcription were coded by research question. Once each of the research questions were individually analyzed, I then looked at the coded data across all research questions to identify themes from that emerged from the overall analysis.

First, I present the result of the analysis by research question. Following this is a description of the themes that emerged from the overall analysis. The three themes are (a)

physicians use a wide variety of sources for nutrition care for patients, (b) physicians address sugar intake with patients for weight management, and (c) physicians often refer patients to outside health professionals for future care for obesity.

RQ1: What Nutrition Counseling for Weight Management Do PCPs Provide to Their Patients?

The first research question aimed to identify if the physician worked on nutrition care with patients. The data indicated that 12 out of the 16 (75%) physicians interviewed engaged with patients on nutrition care for weight management. Participant 3 included, "Nutrition wraps around a lot of different health care issues so it's actually a constant topic and something patients typically have little knowledge on." Several physicians discussed that nutrition came up during the patient visits due to the health benefits of improving their diets. Participant 1 shared, "The patient could be seen for something like a sore throat, but they are also diabetic and overweight, and nutrition would come up when addressing those health concerns with patients." Physicians added that patients' goals in becoming healthier also resulted in nutrition discussions. Participant 9 said, "It usually comes down to goals the patient has, and a general rule about diet is one of the first things to discuss with almost everybody."

The physicians talked about the kinds of discussions they have with their patients. Most (N = 11, 69%) discussed what types of foods to eat during visits, and most (N = 10, 63%) discussed different types of specific diets, including the Mediterranean and Dash diets. Participant 4 said, "If patients were interested in diets such as the Mediterranean diet, you can dive into the different areas to see where they can make changes and what

might be manageable for them." The term *anti-inflammatory* diets came up several times during the discussions on specific diets. Participant 16 added,

> A lot of patients don't even think that their diet is correlated with their inflammation or things such as joint pain, so I end up bringing these diets up but on a superficial level. I would say I take bits and pieces of popular diets to help patients with learning nutrition.

Most physicians discussed sugar intake with patients. Just over half (N = 9, 57%) addressed some version of sugar intake with patients wanting to work on weight management. Participant 4 expressed, "I try to address sugary drinks or any sugar liquids they're consuming immediately."

Physicians often referred patients to outside resources to address nutrition. Most (N = 11, 69%) discussed referring patients to either a dietitian or nutritionist. Participant 8 stated, "Once patients get to a point where they are ready to make changes, then we have other conversations about resources including touching base with our dieticians that we have in our clinic." Participant 6 related, "When my patients ask me about weight loss, I would generally refer them to the weight loss clinic and their program." Referring patients to outside resources can be an important piece in helping the medical field address obesity. Participant 2 said, "Luckily, I do have nutritionists who can sit down with a patient for an hour and talk about nutrition and they can be very individualized and have the patients start a journal on everything they eat and drink."

Participant 10 went in depth with the value of working with nutritionists on the psychological impact of nutrition care and included,

> For nutritionists, it's really more of a behavior support rather than counting macronutrients, carbohydrates, or proteins. Its more support on how to deal with stress or when you are bored at work and want to eat. The psychological aspect of nutrition care is huge.

RQ2: Where Do PCPs Obtain Their Knowledge of Nutrition and Current Guidelines for Weight Management?

The second research question involved learning where physicians gained their knowledge of nutrition care. The first major finding was that only two out of 16 (12.5%) discussed getting adequate information from medical school. Participant 12 stated, "There is not a lot of education about nutrition for doctors." Participant 2 also shared, "Do you mean no training – there was no training in medical school at all." Participant 10 said, "We didn't receive any formal training through medical or residency, and I don't remember any nutrition training aside from managing tube feeds and similar things like that in residency." Participant 7 exemplified the lack of nutrition education and said,

> Nutrition care should be a lot more part of the curriculum than it is because I believe a lot of the stuff that we are seeing in practice is way after the fact. Some patients have been living with poor lifestyle choices for a long time so I think when it comes to education, for sure, I think preventative medicine and nutrition should be a bigger part of the actual curriculum.

Just over half of the participants (N = 9, 56%) had some level of personal interest in nutrition themselves. They obtained nutrition information as a personal interest for themselves or their family. Physicians who wanted to learn how to be healthier through

their diet and nutrition may be more suitable to help patients because there is a lack in formal training in medical school. Participant 4 stated,

> I've always been more health conscious, so I read articles, or watch videos on topics and its normally about nutrition because that is interesting to me. The medical journal stuff is pretty lame and some even still talk about low fat diets.

Participant 16 explained, "I have a special interest in it myself, so I can refer patients to look at resources or even consider looking at their diets." Participant 10 included,

> I was lucky as I was an athlete in college and my wife is really awesome in regard to healthy eating, so I learned a lot from her and from college athletics and it just kind of evolved over time from there.

Just over half (N = 9, 56%) used online resources to obtain knowledge for nutrition care. Online resources included podcasts, YouTube videos, and social media content; all provided information to help gain knowledge useful for working with patients regarding nutrition. Participant 10 stated,

> So, I listen to a couple of podcasts for medicine, and they have a nutrition topic every couple of episodes which is really helpful. They cover a lot of your core topics in nutrition, stuff like interacts with foods and certain drugs so information is out there, you just need to conscious about it.

Participant 14 explained, "I listen to a podcast on weight loss for busy physicians which sort of adopts ideas from cognitive behavior therapy and the obesity code." Participant 12 added to this sediment,

> I have become friends with different podcasters and my dream is to create a course on my own that people can use as a tool to learn what they can do to manage their obesity and all the metabolic health syndromes that go along with that.

Participant 1 described his use of podcasts combined with reading medical journals and said,

> Nowadays I will listen to a lot of podcasts initially for something on nutrition and then I might go and read about it further in medical journals especially if patients have questions on something specific for a diet that I'm not aware of.

Physicians seemed to rely on personal experience to help educate and work with patients.

Half the participants (N = 8, 50%) discussed obtaining knowledge from peer-reviewed literature, which has been established as the most credible resource when it comes to the medical field. Participant 15 supported the use of peer reviewed literature and said, "I mostly use medical journals including JAMA." This finding provides evidence of an inconsistent approach on where physicians obtain nutrition knowledge. Participant 13 stated,

> In all honestly it is very rare that I get anything from any scientific journal per se, other than if it relates to a disease such as vitamin deficiency or some relationship to COVID-19. I typically just get nutrition information from the Internet and basically just the layman's literature such as magazines and things like that.

Participant 13 affirmed, "I'm not getting any different channels of information just because I'm a physician. So, the information I obtain is literally where the public goes for

it. There is no specific curriculum." There appears to be evidence of a variety of ways and resources for physicians to gain nutrition knowledge. Physicians do not always prefer to gain information from primary medical resources. This also presents a legitimate question on the reliability of sources physicians are using to help patients with nutrition care.

RQ3: What Are PCPs' Current Views on the Guidelines to Treat Patients on Weight Management?

Six out of 16 (37.5%) physicians answered that they had knowledge or reviewed any recent guidelines on nutrition care for patients. The ones who did discuss guidelines concluded that more research and understanding on how to help patients is needed. Participant 1 said,

> I feel like more research needs to be done, as most of the guidelines are not very specific and there's a lot of limited information and a lot of bearing opinions especially when it comes to diets and guidelines for physicians. There is also a lot of new medications for weight loss and so many different plans for weight loss.

Participant 10 supported the need for better guidelines as they included,

> Looking historically, there was a big push toward fat-free foods that really did not go well because they just switch calories to sugar. Looking back at the 80s when everything was like, "Oh, fat-free, fat-free, fat-free" and the guidelines pushed tons of sugar on everybody and now it turns out that maybe fats weren't as bad as we thought.

Other participants who acknowledged they reviewed guidelines for nutrition care indicated that more guidelines are needed in more areas such as economic status and culture factors. Participant 3 said,

> We actually do a group that focuses on nutrition, so we discuss updates on what we've read or what new guidelines there are on nutrition. I think the guidelines can be challenging because I think they also have to vary based on income level because eating healthy and having a nutritious diet can be expensive. I think additional guidelines of applying real life scenario on how to make healthy choices when you do not have the monetary means or have the time to necessary cook.

Participant 7 exemplified this by saying, "The fact is there is other social economical factor surrounding me in asking someone to eat well." Participant 5 included, "I think the biggest challenge would be how to work with patients with different budgets. How do you actually stretch your 20$ at the grocery store when you need to?"

Emerging Themes

To create emerging themes, I took the coded data per each research question and looked across all research questions to identify common themes from the participants. Codes were analyzed across all research questions and grouped into three major themes. Then the independent researcher's findings were interpreted and integrated with my own. In general, the themes were consistent across the two analysts with the exception of some small variations.

Theme 1: Physicians Use a Wide Variety of Resources for Nutrition Care for Patients

Table 2 shows the codes mentioned by each participant.

Table 2

Codes Supporting Theme #1

Participant #	Adequate information from medical school	Medical journals	Podcasts	Social media (Facebook & Instagram)	Professional conferences
1		X			X
2			X		
3			X		
4					X
5		X		X	
6					X
7				X	X
8		X		X	
9	X			X	
10		X			
11	X	X	X	X	
12		X		X	
13					
14					X
15		X	X		
16		X			

Physicians use a variety of resources of nutrition information to address weight management with patients. Most sources were not peer reviewed literature but online sources that may or may not always be credible. Participant 10 said

> I listen to a couple of podcasts, and they have a nutrition topic every couple of episodes.

Participant 12 included

I listen to podcasters and have become friends with podcasters and my dream is create a course on my own that people can use." Table 2 demonstrates that physicians do not always gain nutrition information from best sources.

Theme 2: Physicians Address Sugar Intake With Patients for Weight Management

Table 3 shows for each participant the mentioned of the each of the codes.

Table 3

Codes Supporting Theme #2

Participant #	Physicians addressing drinks with sugar content	Physicians discussing low sugar diets	Physicians discussing overall calorie intake	Physicians discussing medical treatment such as surgery or medication
1		X		X
2	X			
3		X		
4	X	X	X	X
5	X	X		
6				
7		X		
8	X			
9	X			
10	x	X		
11		X		
12	X			
13	X	X		
14	X			
15		X	X	
16		X		

Over consumption of sugar was seen as a major problem for overweight patients by physicians. Participant 4 said, "I try to address sugary drinks they are consuming immediately when we meet". Participant 3 included, "I talk to patients on sugar particularly soda". Physicians tend to focus on sugar in their counseling of patients rather

then medical treatments or medication. Participant 2 added, “There are just certain habits that people have such as they drink too much soda. This is a huge thing for me because it drives me crazy, so I’ll probably tell patients to try and cut down sugar by half and star with that”. Participant 4 include, “I start by referring to a nutritionist or dietician or at least discuss trying a medication. If patients are gaining weight for several years in a row, I will talk to them about bariatric surgery. I don’t like to, but if they’re not going to help themselves...”

Theme 3: Physicians Often Refer Patients to Outside Health Professionals for Future Care for Obesity

Table 4 shows for each participant the mentioned of the each of the codes.

Table 4

Codes Supporting Theme #3

Participant #	Physicians referring out to dietitians or nutritionists	Physicians discussing overall lifestyle changes	Physicians have some reluctance in addressing weight
1			
2			X
3		X	X
4	X		X
5	X		
6	X		
7	X		
8	X		
9	X		
10	x		
11			
12	X		X
13			
14		X	
15			
16	X		

Physician's lack of knowledge of specific guidelines and training for weight management has led to patients being referred to more specialized health professionals to combat obesity. Participant 7 included, "I'm limited in knowledge, and the conversation on nutrition ends up being fairly general, so we do a lot of referrals to our nutrition clinic." Participant 8 included, "Once a patient is ready to make changes, we discuss resources including dietitians that we have in our clinic." Participant 2 said, "I have nutritionists who can sit down with a patient for an hour and talk about nutrition."

Evidence of Trustworthiness

In Chapter 3, I proposed that, to ensure validity during the data analysis, any personal views and biases were minimized during the interview or data analysis. To minimize bias, I used a process of self-reflexivity by keeping a journal of my own personal beliefs and thoughts of nutrition care during the interview process. Bracketing was used when analyzing the interview data to focus on only the presented information.

To improve validity, transcribed data were reviewed for accuracy and edited when necessary. Member checking was also performed with a follow-up email to each participant to ensure the participant answers were transcribed as accurately as possible. I was responsible for the interviews, data collection, and data analysis, which helped maintain accuracy. Trustworthiness was established by a committee member reviewing the coding to help strengthen confirmability of the data. An external researcher from outside the dissertation committee analyzed the data independently, thus lending validity to the findings. The data was triangulated with previous research on the research

questions to help determine validity of the new findings. This integration of the literature into previous research is described in Chapter 5.

Summary

The key findings and overarching themes in the data analysis included most physicians interviewed work with patients on some nutrition care for weight management. These physicians discuss what foods to consume for overall health, different types of diets for patients to try, and the impact of sugar in their patients' diet. Other findings provided evidence that these physicians obtain their information from a wide variety of places including online resources, pod casts, peer reviewed literature and non-peer reviewed literature such as magazines which can question the reliability of sources physicians are using to help support patients on their nutrition. This inconsistent approach of where physicians gain nutrition information was a major theme. Only 6 out of 16 of the participants appear to keep up to date with guidelines on nutrition care which can add to the question of reliability of information physicians give out to patients.

Chapter 5 will include the purpose of the study and will compare these results to the literature reviewed in Chapter 2. The comparisons with help extend the knowledge of how physicians work with patients on nutrition care and where these physicians gain their knowledge to help fight obesity. The findings will also be interpreted for the context of the theoretical framework discussed in earlier chapters. The limitations, validity, reliability, and recommendations with also be discussed in the next chapter. The findings from this study can add to the body of knowledge in helping physicians help fight the obesity epidemic through nutrition care for their patients.

Chapter 5: Discussion, Conclusion, and Recommendations

Introduction

The purpose of this qualitative study was to explore the role of physicians in guiding nutrition care for weight management of their patients. I also sought insight into where physicians obtained their knowledge of nutrition and their beliefs on guidelines to help fight obesity. The results of the study give a better insight into how physicians are engaging with patients on nutrition care. Where physicians are obtaining their knowledge of nutrition care and their use of guidelines can also play a large role in the ability to help patients manage weight and overall health. The finding can help with future guidance on how physicians can best assist patients maintain overall health.

Chapter 5 includes an integration of results into the literature reviewed in Chapter 2 for each of the three research questions. The comparisons extend the knowledge of how physicians work with patients on nutrition care and where these physicians gain their knowledge to help fight obesity. Following this, I interpret the results of the thematic analysis in the context of the HPM, the theoretical framework guiding the study. The limitations, validity, reliability, and recommendations are also discussed. Findings from the study can add to the body of knowledge in helping physicians help fight the obesity epidemic through nutrition care for their patients.

Interpretation of Findings

RQ1: What Nutrition Counseling for Weight Management Do PCPs Provide to Their Patients?

Most physicians who participated in the study provide nutrition care for their patients. This contradicts several previous studies that showed a lower rate of physicians participating in nutrition care in their daily practice (Bornhoetf, 2018; Talwalkar, 2016). This contradiction could be due to more recent awareness on how nutrition can impact overall health and more emphasis within the medical field on combating obesity. Recent guidelines recommend that physicians provide more nutrition care to patients (Leblanc et al., 2018). Most participants in this study also discussed different foods and specific diets with their patients to help them with weight management. It has been shown that physicians who engage with patients on nutrition counseling and provide behavioral choices including eating habits and engaging in specific diets can impact overall health (Pool et al., 2012).

Several diets, including Mediterranean, anti-inflammatory, and DASH, were mentioned by participants. It appears that the effort to help patients understand what to eat or which diet is best to adhere to is often present in doctor visits; however, the consistency on specific recommendations including which kind of diet or what foods to eat is inconsistent. The independent researcher found that many physicians rely on personal experience or exposure to diets to help educate patients. Smith et al. (2014) noted that the lack of consistent care among physicians for patients regarding nutrition and reported confusion on the most beneficial nutrition advice for patients. The findings

in this study confirmed this lack of consistency in physician approaches, care, and recommendations regarding specific nutrition advice to patients.

A second key finding was that many physicians addressed problems related to sugar with their patients. Over half of the interviewed physicians indicated that they discussed sugar consumption or avoiding sugary foods and drinks as an important component of weight management. Participants frequently indicated they try to address how much sugar patients consume very early during visits. High sugar consumption has been linked to obesity and illnesses such as Type 2 diabetes (WHO, 2020). With the above inconsistency on what diet advice is best to give to patients, addressing sugar consumption seems to be a trend that many doctors are focusing on in patient visits.

Most physicians interviewed were using outside resources such as referring patients to dietitians or nutritionists. This may be an important finding, as a frequent theme in previous research revealed that physicians lack skill and training when it comes to working with patients on weight management (Cass et al., 2014; Fluker et al., 2013; Hebert et al., 2012; Lewis & Gudzune, 2014; Van Dillen et al., 2013). The result of frequent referrals from doctors to outside resources may be attributed to several barriers physicians face when working with patients, including lack of time with each patient, lack of in-depth knowledge of nutrition care, and lack of adequate resources and evidence-based guidelines available to them. Previous studies supported that these obstacles can negatively impact a physician's ability to effectively work with patients on nutrition care (Chen et al., 2009; Kraschnewsk et al., 2013; Rose et al. 2013; Schauer et al., 2014).

Outside support for physicians, such as dietitians to which patients can be referred, could be an effective means to address nutrition with patients. A previous study showed that physicians who had a referral option, such as a dietitian, showed a higher rate of addressing nutrition during patient meetings (Wynn et al., 2010). Referrals to dietitians and nutritionists may be an import resource for physicians who cannot effectively give nutrition care to patients. Hartmann-Boyce (2015) concluded that by combining physicians' initial nutrition care with referrals to dietitians may be the best way to help start fighting obesity. This could contribute to better overall support for helping doctors with patients' weight management.

RQ2: Where Do PCPs Obtain Their Knowledge of Nutrition Care for Weight Management?

The first key finding was that a high percentage of participants indicated that they received inadequate training on nutrition care in medical school. This supports a study by The Association of American Medical Colleges (2015) in which most medical students believed their education in nutrition was insufficient. The lack of initial training for physicians on nutrition care, combined with a push from medical organizations such as the USPSTF for addressing nutrition on a regular basis, could present challenges to physician- patient interactions on nutrition.

A second discovery was that over half the participants interviewed used online resources such as podcasts, YouTube videos, and social media content to obtain knowledge and understanding of nutrition. The independent researcher also found that it appears physicians do not always like to gain knowledge from primary peer-reviewed

literature. Podcasts, YouTube videos, and social media resources are easily available; however, there is endless information on nutrition on-line, which can add difficulty for physicians to oversee what advice and care is sufficient for treating patients. Physicians previously reported limited effective weight management interventions, resources, and tools proven to work with patients (Kolasa & Rickett, 2010; Tsai, 2010). This lack of effective resources for physicians may have contributed to the use of outside online resources that may or may not be as beneficial as evidence-based research. Johnson et al. (2021) found that social media presents medical misinformation at a relatively high rate; 33% of articles reviewed contained harmful information. While this article focused on cancer, it is likely that findings would be similar to other health areas, including nutrition as well. Physicians primarily using nonevidence-based resources could be a major concern due to the possible inaccuracy in the information they are using.

Half of the participants indicated that they obtain their knowledge of nutrition care from peer-reviewed literature such as medical journals that have been established at the most credible in the medical field. Some of the comments by physicians interviewed included that they obtained information from the internet, magazines, and social media as the public would obtain it from. Other participants suggested that there is no specific curriculum to follow for doctors. This finding suggests that there is a disconnect on how and where physicians gain their knowledge of nutrition, which can lead to an inconsistent approach in treating patients. This evidence presents a legitimate question on the reliability of information physicians obtain and use in working with patients on nutrition.

RQ3: What Are PCPs' Current Views on the Guidelines to Treat Patients on Weight Management?

The first finding indicated that only a third of participants had good knowledge or reviewed any recent guidelines in nutrition care for patients. The physicians who did state they had knowledge of nutrition care guidelines included that more research and understanding is needed in this area to help patients. Previous research has suggested that an implementation of new guidelines to treat patients on weight management can create challenges for current physicians (Chan et al., 2017). Physicians have updated protocols to engage with patients on nutrition care, yet there is no specific training on how to engage with patients. This appears to create a gap between physician training on nutrition care and knowledge of evidence-based research that can impact supporting patients in the best way on matters related to weight management.

A new topic of discussion was the importance of economic status and cultural factors when providing nutrition care to patients. Several participants discussed how a patient's economic situation could play a role in how they work with them on nutrition care. Several physicians included a need to help patients based on their income level because certain diets and healthy choices can typically be more expensive or difficult to find in certain areas of the country. One participant discussed how working with patients on choices such as stretching $20 at a grocery store was a huge challenge. Several physicians also discussed cultural barriers to nutrition care, including a disconnect how to work with patients who had different cultural eating habits or specific types of foods that were ingrained into their families for decades. These economic and cultural challenges

can continue to add to an already challenging goal of helping treat patients through nutrition care.

Integration of Findings Into HPM Framework

Pender's (2011) HPM was used as the theoretical framework as it relates to health care professionals' ability to influencing patient health behavior. The HPM focuses on patients improving their health and includes several constructs, such as perceived benefit of behavior, barrier of behaviors, prior behavior, and committing to an action plan.

The framework of the HMP model helps understand how health care interventions can support and influence better health outcomes for patients. The study provides support for the importance of nutrition counseling to motivate patients to change their behavior, consistent with what was proposed by Khodaveisis et al. (2017). Physicians are engaging with patients to influence behaviors, such as addressing nutrition, which is important as a vehicle for changing patient behavior consistent with the HPM. However, findings of the study suggest that more current research and training for physicians could be beneficial for better overall support for patients. Many physicians may be realizing their lack of nutrition knowledge and are looking to influence patients' nutrition by referring to outside resources such as dietitians to help patients' commitment to their overall health.

There are several barriers for physicians in influencing new healthy behaviors to patients. There is a lack of knowledge but also the perceived perception of patients being told they are overweight or need to make changes. The idea of addressing one's own weight can be challenging to physicians. Participant 2 stated,

> Well, actually I just need to bring it up and they already know it. I mean, it's a confirmation or validation of their own thoughts on their weight or their diet and sometimes it's quite urgent if somebody does have diabetes and we're trying to wrestle with blood sugars that are too high, it's quite specific. I'm not talking about something that they haven't thought about, or we haven't talked about in the past, but it's just reinforcing how what you consume is going to have an impact, positive or negative, on your health.

Some physicians may not believe they will make a difference with patients, which can negatively impact their perceived influence. Participant 5, said,

> I think people are mostly open to a discussion. People know they're overweight and they don't like it, but it's just the willpower factor. I can't tell you how many times, we'll come back year after year, and they've gained more weight and I ask them what they are doing?

Limitations

There are factors that limit generalizability. The sample of 16 physicians was sufficient for the proposes of this study to gain more insight into how physicians work with patients regarding nutrition; however, the results may not be representative of physicians nationwide. A larger sample could have provided further understanding of the main research topics, and future studies could include larger samples. A second limitation is that only physicians were interviewed for this study. Further health care providers such as physicians' assistances and dietitians could have added more insight to the overall picture of nutrition care in health care. In qualitative research, there is always the

possibility that bias can be introduced during data collection and analysis. To help increase validity for the study, reflexivity was exercised through the interview process to help minimize my own bias and stay true to the participants insights in the subject matter.

Implications for Future Research and Practice

Physicians are an important part of the fight against obesity. How physicians provide nutrition care on a consistent basis for weight management is relatively unknown. Previous research has suggested several barriers physicians faced when working with patients on nutrition care, including their lack of knowledge regarding nutrition. This study provided more insight into how physicians engage with patients and how physicians obtain knowledge regarding nutrition. Future research in this area could include a larger sample size of physicians to continue to gain insight in what nutrition care is regularly being provided to patients. Another research suggestion would be future studies on what specific approaches to nutrition care worked best for patients to lose or maintain a healthy weight. A final suggestion would be to include further health care representatives such as nurses, physician assistants, and dietitians to help understand the patient experience.

Conclusion

Physicians are currently engaging with patients on nutrition care for weight management. How physicians work with patients and what recommendations are given is inconsistent and varies depending on physicians' own interest in nutrition and what resources they use to obtain their knowledge. There does appear to be a consistent trend in physicians addressing sugar and sugary foods and drinks with patients as one major

concern for weight management. Additional training in nutrition care, a centralized approach to engaging with patients, and outside resources for physicians may benefit the overall approach to weight management for patients.

The results of the study showed that physicians gain their knowledge and understanding of nutrition from a variety of resources, with a large percentage using resources that are not always evidence based. With a lack of initial training in school and useful tools for nutrition care, physicians are often using general online resources to treat patients on weight management. The variety of nutrition resources and low understanding of up-to-date guidelines can lead to inconsistent care for patients. To help support the fight against obesity, physicians should have further training in nutrition care and nutritional guidelines, more centralized evidenced-based research on nutrition, and opportunity to refer out to other health care personnel when appropriate.

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Appendix A: Interview Protocol

Below are direct research questions to guide the interview for each participant. A guide was created to help follow each interview process.

Please answer each question to the best of your ability. The interview will take approximately 20 minutes and will be recorded.

Interview Questions:

1. Beginning with the topic of working with patients, what experiences do you as a PCP have in engaging with patients on nutrition care for weight management?

   Probes:

   How often and when do address nutrition to patients?

   Based on your experience, what are some strategies you use when working with patients on nutrition care?

   What are some concerns or issues with engaging with patients on nutrition?

2. Where do you as a PCPs obtain your knowledge and understanding of nutrition care for weight management?

   Probes:

   What resources or education have you obtained your nutrition information you give to patients?

   Based on your experience working with patients what outside sources or materials do use to help with nutrition care?

Do you attend any nutrition trainings or continuing education to gain further knowledge on nutrition?

3. What are your current views on the guidelines to treat patients on weight management in primary care?

   Probes:

   Have you noticed any changes in guidelines or research on to treat obesity through nutrition care with your patients?

   What are your thoughts on future guidelines on nutrition care that could be established to help the fight against obesity?

Closure

I appreciate you taking the time out of your busy schedule to answer these questions. I want to reassure you that your answers and participation will remain confidential. After I have the recording transcribed you will receive a copy by email to evaluate if you choose to do so. Do you have any questions about the interview or study?

Appendix B: Demographic Information Questionnaire

To be asked by the Interviewer before the interview protocol questions.

1) Please specify your gender. ☐ Male ☐ Female

2) Please specify your age: ☐ ≤ 30 ☐ 31-40 ☐ 41-50 ☐ ≥51

3) How long have you been working in your profession? ☐ ≤ 10 years ☐ Between 11 and 20 years ☐ Between 21 and 30 years ☐ ≥ 31 years

4) During a typical week at work, what proportion of your patients are obese (BMI ≥ 30.0 kg/m2)? ☐ Less than 25% ☐ Between 25% and 50% ☐ Between 50% and 75% ☐ Higher than 75%

5) What setting do you work in? ☐ Hospital ☐ Clinic