Public Health

Physician-Delivered Dietary Counseling: A Review

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Eating a healthy diet is crucial for one's health and the prevention of chronic disease. However, the majority of Americans' diets do not meet current guidelines, which has contributed to the growing epidemics of obesity and chronic disease. Furthermore, most adults lack the dietary knowledge necessary to develop healthier eating patterns. Because physicians' advice is a strong predictor for behavioral modification among patients, the *Healthy People* objectives have emphasized physician-delivered dietary counseling since 2000. Physicians are highly trusted by patients and see patients more frequently than any other health care professional, making them especially well-suited to talking to patients about adopting healthier diets. However, physicians do not widely practice dietary counseling during patient visits, and some groups of patients are less likely to be counseled than others. This review examines past research on patient characteristics – age, education, gender, body mass index, insurance coverage, and race/ethnicity – correlated with the receipt of dietary counseling from physicians, concluding with a brief discussion of barriers that physicians may face in counseling patients and recommendations for clinical practice.

Physician | Diet | Nutrition | Counselling | Predictors

Diet, Chronic Disease, and Obesity

A healthy diet is key to maintaining and improving overall health, while unhealthy diets impair normal bodily functions and thereby cause a variety of diseases. A large body of medical research has demonstrated the importance of eating a healthful diet for both individual and population health. Consumption of adequate amounts of fruits and vegetables reduces an individual's risk for developing cardiovascular diseases and several types of cancers.[1,2] The health benefits are even more pronounced when viewed through the lens of population health. For instance, for the estimated 79 million pre-diabetic adults in the United States, progression to type-2 diabetes mellitus is not inevitable. Proper nutrition can greatly lower their chances of developing the disease; in fact, in a randomized controlled trial among people with impaired glucose tolerance, patients that were assigned to a dietary intervention had a significantly lower (29%) likelihood of developing type-2 diabetes than those in the control group.[3] However, even though Americans that have gradually embraced healthier eating habits, the "average American diet" still falls short of many recommended dietary patterns; 37.7% and 22.6% still consume less than one serving of fruits and vegetables, respectively, per day,[4] and approximately 33% of the total calories comes from fat.[5]

Unhealthy diet has also been implicated in substantial morbidity and mortality related to chronic illnesses. It is a major risk factor for two of the five leading causes of preventable deaths in the United States – cardiovascular disease and cancer.[6] In addition, according to data from the 2003-2006 National Health and Nutrition Examination Surveys (NHANES), high dietary salt, low dietary omega-3 fatty acids, and high dietary trans fats together accounted for approximately 268,000 (10%) of deaths in the United States in 2005.[7] These causes manifest in intermediate risk factors such as high blood pressure, high LDL cholesterol, and overweight/obesity. There is considerable evidence that the consumption of high-levels of processed foods high in fat and sugar content and that increased levels of dietary trans-fats and saturated fats increase the risk of becoming overweight or obese.[8]

Increased risks of diseases such as coronary heart disease, hypertension, breast cancer, colorectal cancer, and type-2 diabetes mellitus are associated with increased body mass index (BMI).[9,10] In 2011-2012, the prevalence of obesity in the United States was 33.5% among adult men and 36.1% among adult women, having reached epidemic proportions.[11] The economic costs of obesity account for $110 billion (in 2016 U.S. dollars), nearly 10% of national health care expenditures in the United States.[12] The obesity epidemic may even worsen in the near future. Based on past and current trends in BMI growth a simulated model projected that by 2030 there will be 65 million more obese adults than in 2010 in the United States, resulting in a loss of 24.5-48.2 million quality adjusted life years (QALY).[13] However, this trend is not inevitable, as 2.1% reductions in the BMI of every American adult would result in gains of about 16 million QALYs during the same time period.[13] Obesity and overweight represent a major population health burden that warrants a much greater utilization of behavioral interventions focusing on improving the diets of American patients.

Psychosocial Determinants of Diet

Factors involved in dietary patterns are complex and include sociocultural norms and resources available to a person. These issues are compounded by the deficits of knowledge about proper diets that many Americans have. Public knowledge about dietary fats and cholesterol remains poor,[14] and many people have false perceptions about the nutrient adequacies of their own diets.[15] However, increased awareness alone is not an optimal solution. Dietary habits are also influenced by a plethora of psychosocial factors. For example, according to the Health Belief Model, a patient will modify a negative health behavior if he or she believes that the behavior makes him or her more vulnerable to developing or worsening disease(s), altering the behavior will effectively decrease his/her risk, and any potential costs due to changing that behavior will be outweighed by potential benefits.[16] Likewise, the Social Cognitive Theory emphasizes the role of the patient's self-efficacy, which refers to his/her belief in whether or not he/she is capable of making the necessary changes concerning a certain health behavior, in addition to focusing on the role of the patient's social environment in the initiation and maintenance of the behavior.[17] Simply increasing people's knowledge about healthy eating will not suffice, a patient-centered approach that takes these psychosocial factors into account is warranted.

Conflict of interest: No conflicts declared.

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Diet and Clinical Practice

As the highest level of medical professionals, physicians may be the most qualified health care providers for dealing with health issues and concerns. Because of their important roles in diagnosing and treating chronic conditions related to modifiable health behaviors, physicians are particularly well-positioned to provide guidance /counsel patients about their dietary habits. Physicians may also be able to facilitate long-term adherence to changes in diet because many patients see their physician three or more times annually.[13] A number of trials have shown that brief counseling sessions about nutrition can be effective in changing deleterious health behaviors, including those of patients with or at-risk for chronic conditions.[18-20]

Recognizing that the modification of dietary habits presents an important opportunity to reduce preventable morbidity and mortality at the population level, the *Healthy People 2010* objectives included recommendations on nutrition counseling delivered by health professionals in clinical settings, and *Healthy People 2020* has even listed physician-delivered nutrition counseling as a health indicator.[21,22] However, the frequency of physician-delivered counseling sessions on health behaviors remains low, with nutrition only being discussed in about 12% of physician visits (for both adult and child patients) in the United States in 2007.[22] Physicians have cited inadequate teaching materials, lack of training in counseling, and insufficient time spent with patients as barriers to providing lifestyle counseling.[23] Due to underutilization by American physicians, *Healthy People 2020* adopted the goal of increasing the frequency of physician-delivered diet and nutrition counseling to 15% of physician visits (for both adult and child patients) by the end of the decade.[22]

Although physician-delivered counseling has considerable potential as a form of primary and secondary prevention, and a substantial body of literature supporting its effectiveness, the factors associated with counseling, such as patient sociodemographic characteristics, health care access, and health status, have not been as well-studied and the results of this research have been somewhat unclear due to the size and heterogeneity of the samples used. The purpose of this paper is to review some of the sociodemographic and healthcare related factors related to physician-delivered dietary counseling; and to create an adequate picture of the current state of physicians' counseling on diet in the U.S. The review concludes with recommendations for clinical practice and future research on lifestyle counseling in clinical settings.

Predictors of Physician-Delivered Diet Counseling

Age

Aging plays a major role in the health and disease process of people, and dietary patterns are often affected by advancing age. Several past studies have shown that older patients are more likely than younger patients to be counseled about diet by a physician.[24-27] This is likely a response to the different clinical needs of elderly patients, who suffer from a high burden of chronic disease. In 1999, over 82% of Medicare beneficiaries had at least one chronic condition, and 65% had at least two chronic conditions.[28] However, a very recent cross-sectional study using data from the 2011 National Health Interview Survey found that the prevalence of receipt of physician-delivered dietary counseling among adults aged 75 years or older was not significantly higher the prevalence among adults aged between 18 and 24 years.[24] Similarly, another study, this time based on data from the National Ambulatory Medical Care found no significant differences in the odds of being counseled between age groups.[29] This may be partially due to the increasing prevalence among American children of weight- and diet-related chronic conditions.[30] Many of these conditions continue into young adulthood and are linked to well-documented dietary changes among American children, such as increases in energy intake, fast food meals, and size of portions.[31] There was also an observed increase among adults aged between 25 and 44 years between 2000 and 2011, which may reflect greater awareness about this age group's relatively high risk for weight gain and obesity.[11]

Education

Socioeconomic disparities are also important when it comes to physician-delivered counseling. Very few studies examined the relationship between patients' education level and receipt of dietary counseling. However, the studies that have been conducted found that higher levels of education have been shown to be significantly associated with a greater likelihood of having been counseled about diet, even after controlling for relevant factors like annual household income.[24,26] Patients who have completed higher levels of education are likely to possess a greater degree of health literacy, as well as generally better communication with their physicians.[32,33] Patients with greater health literacy may be more likely to initiate discussions with their physicians about diet and exercise. This may also reflect perceptions held by physicians regarding their less educated patients' ability to follow through with recommended changes in their diets due to lack of resources and health literacy, despite being more vulnerable to diet-related morbidities.[14,15,34,35]

However, physicians may be overlooking an important group with a greater need for dietary counseling. Education enables the acquisition knowledge about nutrition, as well as the ability to use this knowledge to develop healthier dietary practices. Children with parents who had completed higher levels of education have greater intakes of protein, fiber, and vitamin A and greater consumption of vegetables.[36] Likewise, maternal education level is inversely related with children's intake of sugar and the percentage of their children's energy derived from fat.[37] This impact also carries into to adulthood. In fact, having completed education beyond high school predicts for a higher-quality diet among American adults, according to the Healthy Eating Index.[38]

Gender

Gender and sex play significant roles in human health through different pathways, including psychosocial and physiological. According to previous studies, women were more likely to be counseled by their physicians about their diets.[24-26] In fact, women are more likely than men to be diagnosed with obesity,[29] which in turn may provide greater motivation for physicians to provide weight-related counseling. Though these differences in approaches to counseling may be due to perceptions physicians may hold about gender-specific ideal body sizes. It has been shown that female patients also tend to have more frequent and enduring visit/contact with their physicians, relative to male patients, increasing their likelihood of receiving weight loss advice related to diet as well as an obesity diagnosis.[39] Women are also more likely than men to report weight-control behaviors, lower body satisfaction, and a greater association between body satisfaction and self-esteem, potentially making women more likely to initiate discussions about weight with their physician.[40]

Body Mass Index (BMI)

Several studies have found BMI to be an independent predictor for the receipt of advice on diet from physicians. Obese and overweight patients are more likely to be counseled about diet than patients with healthy weights.[24,30,41-43] This increased attention to overweight and obese patients is warranted by the

effects of excessive weight gain on morbidity and mortality.[44] However, relative to normal-weight patients, overweight and obese patients are also less likely to visit a physician, despite a higher risk of morbidity, and more likely to be referred to multiple physicians, which may reflect previously documented stigma toward obesity as well as lower confidence in the self-efficacy of overweight and obese patients.[45,46]

Insurance Coverage

Insurance provides access to health care for patients and a majority of the cost reimbursement for physicians. Uninsured patients are far less likely to be advised about their diets than patients with any form of insurance coverage, even when controlling for factors like income and number of physician visits in the past year.[24-26] Receipt of counseling also differs when examining different types of insurance coverage. Patients with private insurance coverage are significantly more likely to receive diet counseling during doctor's office visits than patients with forms of public insurance like Medicaid and Medicare.[25,47] However, people of low socioeconomic status, including those lacking insurance coverage or those covered by Medicaid, have a high risk of becoming overweight and/or obese.[11]

Race and Ethnicity

Findings on the relationship between race/ethnicity and dietary counseling were quite mixed. Several studies found that there were no disparities between racial groups in receipt of counseling.[27,29,41,43,47] One study found that White, non-Hispanic patients were significantly more likely to be counseled than Hispanic (of any race) patients.[26] The cross-sectional study using data from the NHIS found a similar result when examining the survey data from 2000.[24] However, the data from the 2011 survey results showed that Hispanics were 18% more likely and Blacks (non-Hispanic) were 42% more likely than Whites to have received nutritional counseling.[24] This may be due to increased national attention and awareness among physicians of the disparities in health care affecting racial/ethnic minorities. Black and Hispanic patients are more likely to be diagnosed as overweight or obese by their physicians than White patients, possible prompting physicians to counsel these patients on weight-related behavioral issues like exercise habits as a means of primary prevention.[29,42,48]

There are also substantial disparities in diet quality and nutrient intake between racial/ethnic groups that warrant this increased focus on non-White populations. In comparison to other racial/ethnic groups in the U.S., African Americans are at greatest risk for insufficient consumption of vegetables, while Native Americans are at greatest risk for insufficient consumption of fruits.[49] Additionally, Hispanics have been found to have lower diet quality than non-Hispanic Whites.[50] According to the Bogalusa Heart Study, African American children consume greater amounts of fat in their diet than White children and also derive a greater percentage of energy from fat in their diets.[51] Consumption of fast food, which is notably high in fat content, is also much greater among non-White Americans.[52] Marketing of high-calorie foods like fast food has proven to be a major barrier to healthy food choices for minority populations.[53]

Implications for Clinical Practice

Despite the moderate, although encouraging, increases in the past decade, the prevalence of physicians' counseling on diet in the U.S. remains low. Between 2000 and 2011, the percentage of adults who discussed their diet with their physicians in the past year increased by nearly 10 percentage points to 32.6%.[24] However, more than 90% of adult HMO members have expressed their desire for behavioral and lifestyle advice from their physicians.[54] Interestingly, most primary care practitioners also believe nutrition counseling to be part of their responsibilities as health care providers.[55] This discrepancy may indicate barriers physicians continue to face in providing lifestyle counseling to their patients, most notably insufficient time and lack of compensation from insurance providers.[55] It also reflects the lack of physicians' confidence in or awareness of the effectiveness of counseling, which lowers their likelihood of advising patients.[55] Regardless of its root causes, the underutilization of nutritional counseling further exacerbates the deficits in dietary knowledge held by the American population and allows the prevalence of diet-related chronic illness to increase unabatedly. These issues necessitate standardized education on diet counseling during medical school and primary care residencies and possibly an increased reliance on other health professionals such as dieticians who can discuss these issues with patients if physicians lack the time and/or resources to do so. Referrals to onsite dieticians in outpatient physician offices are quite effective in maintaining weight loss in patients.[56] Because of their expertise, dieticians could be better equipped to counsel patients on how to establish healthier diets suited to their unique health needs, with the direction of their physicians.

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