PATIENT-PROVIDER DISCUSSION ABOUT NUTRITION DURING ROUTINE VISITS: FREQUENCY, QUALITY, AND OUTCOMES

By Kerriann Fitzgerald & Danielle Blanch-Hartigan*

With over two-thirds of the adult population in the US overweight or obese, discussion about nutrition between patients and providers during routine visits may be a point of intervention. However, a strong evidence-base is needed for how often these discussions occur, the quality and characteristics of these discussions, the relationship with patient weight, and how these discussions influence patient satisfaction, perceptions of patient-centered communication, and behavioral intention. This study used an online Mechanical Turk survey of 339 participants who had seen a doctor for a routine visit in the past year. Only 16.2% of participants had discussed diet and nutrition in detail with their doctor at their last routine visit. 45.1% said they had discussed these topics a little, and 123 (36.3%) had not discussed these topics with their doctor at all. The majority of these discussions lasted less than 5 minutes. Discussion about nutrition-related topics was associated with higher overall satisfaction with communication and more patient-centered communication. Doctors were more likely to have these conversations with patients with greater body mass index. Increased nutrition-related discussion between doctors and patients at routine checkups was associated with an increased intent to change behavior and eating habits following the conversation. The positive association between doctor-patient communication about nutrition and increased intention to change nutrition-related behavior, patient satisfaction, and perceptions of patient-centered communication suggests that doctors may want to increase not only the frequency but the quality of their discussions about nutrition.

Keywords: Nutrition; doctor-patient communication; patient-centered care; patient satisfaction; obesity.

I. Introduction

There is a growing obesity epidemic in the United States. According to the Centers for Disease Control and Prevention (CDC), 70.7% of the population in the United States is overweight or obese, with a BMI higher than 25.0 (CDC, 2016). The increasing obesity epidemic in the country is related to a number of health conditions including heart disease, stroke, type 2 diabetes, and cancers. Additionally, the associated medical costs resulting from obesity-related complications was approximately $147 billion in 2008 (CDC, 2015).

Patient-provider communication may be one touchpoint for bending the curve in the obesity epidemic. Patient-centered communication in particular is key to the quality and

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effectiveness of discussions between patients and their healthcare providers. Patient-centered communication is defined by the Institute of Medicine as “healthcare that establishes a partnership among practitioners, patients, and their families (when appropriate) to ensure that decisions respect patients’ wants, needs, and preferences and that patients have the education and support they need to make decisions and participate in their own care (Institute of Medicine, 2001).” This includes six key elements: 1. Fostering a healing patient-provider relationship through building rapport and trust; 2. Exchanging clinical information and understanding patients’ representations of that information; 3. Responding to patients’ emotional needs; 4. Helping patients manage uncertainty; 5. Involving patients in the decision-making process; and 6. Enabling patient self-management through supporting patient autonomy and providing appropriate resources (Epstein & Street, 2007). The impact of patient-centered care on a patient’s satisfaction is well established. Research demonstrates that a more patient-centered communication style is related to more patient satisfaction and better patient outcomes including more appropriate diagnosis and treatment, increased patient adherence, and even reduced malpractice and lower costs (for reviews see Stewart, 1995; Kelley, Kraft-Todd, Schapira, Kossowsky, & Riess, 2014).

Although we have extensive information about the impact of patient-centered communication in clinical interactions in general, less work has looked specifically at the quality and patient-centeredness of communication about nutrition. Previous research has demonstrated that discussions about weight and nutrition are not ubiquitous. In a study of PCPs, 8.9% PCPs provided 52% of all weight counseling and 58% of PCPs did not discuss weight at all with their patients (Kraschnewski et al., 2015). Studies have explored the impact of routine nutrition counseling completed by a primary care physician on patients’ long-term health decisions. Although the overall effect sizes of these studies are low to moderate, they highlight the role of routine care in communication about nutrition (Newland, 2003). Additional research has been conducted regarding whose responsibility it is to counsel patients on nutrition (Kolas, 2010). Some health care providers believe that it is, in fact, a duty of a primary care doctor to include nutrition counseling within a routine checkup, while others find that a patient seeking such information must be referred to a dietician or nutritionist (Kolas, 2010). The patient perceptions of the quality of this communication is less understood.

The present study used an online survey research design to explore the frequency and quality of patient-provider communication about nutrition during routine care. We examined the relationship between nutrition communication and patient satisfaction. In addition, we assessed whether having conversations about nutrition impacts a patient’s dietary and nutrition-related habits following the routine checkup. We also assessed the impact of patient overweight status on nutrition discussions.
II. Methods

All study materials and procedures were reviewed by Bentley University Institutional Review Board. The study was funded by an honors research fellowship grant to Kerriann Fitzgerald by the United Technologies Corporation. This study distributed a survey to participants via Mechanical Turk, an online platform offered by Amazon. Each participant was paid a small sum, ranging from $0.50 to $2.50 through Mechanical Turk. The survey took approximately 10 to 15 minutes to complete. Participants who were less than 18 years of age, who did not consent to the study, or who had not visited their doctor for a routine checkup within the past year were excluded from the study. Survey items were adapted from the Health Information National Trends Survey (HINTS).

Participants were asked how they perceived the level of care received at their most recent routine checkup, defined as a general physical exam, not an exam for a specific injury, illness, or condition. Participants were asked six questions corresponding to the six functions of patient-centered communication: “How often did the doctor you saw for your last routine checkup do each of the following?”

1. Give you the chance to ask all the health-related questions you had? (exchanging information)
2. Give the attention you needed to your feelings and emotions? (responding to emotions)
3. Involve you in decisions about your health care as much as you wanted? (making decisions)
4. Make sure you understood the things you needed to do to take care of your health? (enabling self-management)
5. Help you deal with feelings of uncertainty about your health or healthcare? (managing uncertainty)
6. At your last routine check-up, how often did you feel you could rely on your doctor to take your of your health care needs?” (fostering healing relationships)

Response options were always, usually, sometimes or never. Participants were also asked to rate the overall communication with their doctor at their last routine check-up as excellent, very good, good, fair or poor.

The survey then asked participants to indicate which topics were discussed at their last routine check-up with their primary care provider. Response options were “no, did not discuss”, “yes, discussed a little”, and “yes, discussed in detail.” Topics were: weight or weight loss; fitness, exercise or physical activity; and food, nutrition, or diet. A follow-up question was then presented to those who had responded that they had not discussed nutrition-related topics at their last routine checkup. This question asked if this topic had ever been discussed between participants and their doctor. If participants responded that they had discussed food, nutrition, or diet, they were then asked to report on the duration of the discussion (less than 1 min, 1-4 min, 5-9 min, or 10 min or more), who brought up the topic of nutrition first (doctor, patient, someone else, not sure/don’t remember), and the
participants attitudes towards nutrition discussion on a 5-pt likert scale from strongly agree to strongly disagree:

- I think my doctors should talk about nutrition or diet with all their patients during routine checkups
- I want my doctor to talk about nutrition or diet with me during routine checkups
- I want to be the one to bring up nutrition or diet with my doctors during routine checkups
- I do not want to talk about nutrition or diet with my doctor during routine checkups
- Another healthcare provider, i.e. nurse, nutritionist, dietician, specialist, should be responsible for talking with patients about nutrition or diet

For participants who had discussed food, diet or nutrition at their last routine visit, the survey asked which specific topics relating to nutrition patients had discussed with their doctors at their last routine checkup. This question was only presented to those who had discussed this topic at their last routine visit because of concerns about recall.

The questionnaire then asked participants how they viewed their own health and wellness and prompting them to rate how often they try to increase or decrease consumption of certain food groups. Additionally, this question asked participants about weight maintenance and whether they have intentionally tried to change or maintain their weight in the past year. To assess behavior change intentions, participants were asked if their most recent discussion with their doctor about nutrition or diet impacted their daytoday nutrition or eating habits (0 = not at all, 1 = a little, 2 = some, 3 = a lot).

Participants were then asked whether they had ever sought out nutrition information from any source and ranked their choices of the most reliable resources for such information. Finally, the participants were asked their overall health status, whether they had a personal or family history of cancer, and whether they had received a diagnosis from a list of other medical conditions such as diabetes or a heart condition. Participants reported height and weight used to calculate BMI, categorized into underweight (BMI < 18.5), normal weight (BMI 18.5-24.9), overweight (BMI 25.0 -29.9), obese (BMI 30.0 – 39.9), and very obese (BMI 40 and above). Additionally, participants were asked their gender (male, female, prefer not to answer), age, race, ethnicity, education, employment status, native status, marital status, and income. For a full list of survey items, please contact the authors.

**Analyses**

Descriptive statistics were used to analyze patient characteristics and the frequency of nutrition-related discussions. The relationship between nutrition-related discussions and patient-centered communication was analyzed using a series of ANOVAs. All analyses were conducted in SPSS v. 24.
III. Results

**PARTICIPANT CHARACTERISTICS**

339 participants reported having seen a doctor for a routine check-up in the previous year and were thus included in the analysis (Table 1). Participants included 159 (46.9%) males and 158 (46.6%) females. Additionally, the sample included 3 (.9%) participants who preferred not to disclose their gender and 19 (5.6%) participants who failed to complete the question regarding gender. The majority of participants for the survey were white (N = 271, 79.9%), born in the United States (N = 308, 90.9%), were either married (N = 133, 39.2%) or single (N = 120, 35.4%), and the vast majority of participants (74%) were employed. The mean age of participants was 37.20 years of age with a standard deviation of 11.77 years. The majority had completed college (N = 148, 43.7%) and most had household incomes of $20,000 to $34,999 (N = 68, 20.1%) or $50,000 to $74,999 (N = 70, 20.6%).

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In response to whether a doctor had discussed anything related to food, nutrition, or diet with them at their last routine checkup, 55 (16.2%) participants stated that they had discussed this topic in detail, 153 (45.1%) said they had discussed this topic a little, and 123 (36.3%) had not discussed this topic with their doctor at their last routine checkup. For those that had not discussed this topic at their last routine checkup, 50 (14.7%) replied that they had discussed this topic but not at their last checkup and 73 (21.5%) stated that they had never discussed this topic with their doctor.

Of the sample of participants who had a discussion regarding nutrition with their doctor, 131 participants (38.6%) stated that their doctor had brought up the topic first, 108 (31.9%) participants began the conversation themselves, 3 (.9%) participants had the conversation started by a caregiver, family member, friend or nurse at the appointment with them, and 12 (3.5%) are not sure or do not remember who began the nutrition conversation when it was discussed.
The majority of participants who had discussed nutrition-related topics at some point in the past had a conversation that lasted between 1 to 4 minutes (153 participants or 45.1% of the sample that had discussed nutrition-related topics). 71 participants (20.9%) had had conversations with their doctor lasting a duration of 5 to 9 minutes total. 16 participants (4.7%) had conversations lasting 10 minutes or more on the topics and 14 participants (4.1%) discussed the topics for less than 1 minute.

The 208 participants who had discussed nutrition at their last routine check-up were asked to report which specific topics were discussed. Increasing healthy food choices, including fruits, vegetables, and whole grains, was discussed with 117 participants (56.3%). Decreasing unhealthy food choices such as reducing intake of processed foods, saturated fats, salt, high fructose corn syrup, etc. was discussed with 105 participants (50.5%). Recommended daily intake and portion sizes based on the food pyramid or other dietary guidelines were discussed with 36 participants (17.3%). 72 participants (34.6%) discussed nutrition or diets relating to specific health conditions, such as a low-salt diet for high blood pressure. 26 participants (12.5%) discussed diets for allergies or gluten-free diets with their doctor. 59 participants (28.4%) discussed weight-loss or weight control. 19 participants (9.1%) discussed specific diet plans such as Weight Watchers or low-carb diets. 16 participants (7.7%) stated that they had discussed other topics relating to nutrition with their doctor. Such open-ended responses included discussions of foods that might cause constipation, foods related to a low protein intake, good proteins for vegetarians, and low fat or fat free options during pregnancy.

**Nutrition Discussion and Patient-Centered Communication**

The relationship between discussion of nutrition and participant reports of patient-centered communication was significant for almost all of the patient-centered communication items. Participants who had discussed nutrition in detail with their doctors (mean = 4.33) or a little (mean = 4.30) were more likely to report that their doctor gave them time to ask all health-related questions (F = 2.93, p = .093) than those who had not discussed nutrition with their doctor (mean = 4.08). Participants were more likely to report that their doctor had given the attention they needed to their feelings and emotions (F = 4.45, p = .012) if they had discussed nutrition in detail (mean = 4.22), or discussed nutrition a little (mean = 3.93), compared to those who had not had such discussions with their doctor (mean = 3.70).

Participants who had discussed nutrition in detail (mean = 4.44) were more likely to report their doctor involved them in decisions about their health care as much as they wanted than those who had discussed a little (mean = 4.14) or not at all (mean = 3.96, F = 4.80, p = .009). Participants who reported more nutrition discussions also felt their doctor made sure they understood the things they needed to do to take care of their health (F = 11.78, p < .001), with those who had discussed nutrition in detail (mean = 4.65) and those who had discussed it a little (mean = 4.33) higher than and those who had not discussed at all (mean = 4.00). Reporting that their doctor explained things in a way they could understand
followed the same significant pattern \( F=3.70, p=.026 \) with patients who had discussed nutrition in detail (mean = 4.64) or a little (mean = 4.46) reporting higher patient-centered communication than those who had not discussed nutrition (mean = 4.00).

Finally, participants who had more nutrition-related discussion reported they could rely on their doctor to take care of their health care needs \( F=13.02 \) and \( p<.001 \).

The relationships between nutrition communication and patient-centered communication did not significantly differ when comparing male vs. female patients or male vs. female doctors.

**Nutrition Discussion and Patient Satisfaction**

In addition to more patient-centered communication, patients who reported discussions with their doctor about nutrition at their last routine checkup also reported higher levels of overall satisfaction with the communication with their doctor at that visit \( F = 11.15, p < .001, \) Figure 1). This also did not vary by patient or provider gender.

**Figure 1**

![Relationship between nutrition-related discussion and overall satisfaction with doctor’s communication during the last routine checkup.](image)

**Nutrition Discussion and Behavioral Change Intentions**

There was a significant relationship between the level of nutrition-related discussion a participant had with their doctor and the degree to which that participant reported attempting to change his or her day-to-day nutrition or eating habits over the previous year \( F = 11.78, p < .001, \) Figure 2). Participants who had discussed nutrition in detail at the last visit were more likely to report behavior change intentions, followed by those who had discussed nutrition a little, or in the past.
BMI as a Predictor of Nutrition Discussion

BMI was significantly related to discussions about nutrition during the last routine checkup (F=3.74 and p=.011, Figure 3). Participants with higher BMIs were more likely to have discussed nutrition in detail at their last visit than those with lower BMIs. Those who reported never discussing nutrition with a doctor at a routine checkup had the lowest BMIs.

IV. Discussion

This study explored the frequency, quality and characteristics, and relationship to patient satisfaction and perceptions of patient-centered communication of nutrition-related discussions during routine check-ups between patients and primary care doctors. Nutrition-related discussions occur in detail less than 20% of the time and the majority last for less than 5 minutes.
Figure 3

<table>
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<tr>
<th>Nutrition Discussion</th>
<th>Average BMI</th>
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<tr>
<td>Never discussed</td>
<td>24</td>
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<tr>
<td>Discussed in past, but not at last visit</td>
<td>25</td>
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<tr>
<td>Discussed a little at last visit</td>
<td>26</td>
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<tr>
<td>Discussed in detail at last visit</td>
<td>27</td>
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Relationship between nutrition-related discussion and participant body mass index (BMI)

However, this research also demonstrates that when these discussions do occur, particularly when they occur in detail during a routine visit, they had benefits for the patient and the patient-provider communication. Nutrition-related discussions were associated with increased patient perceptions of the quality of the communication both overall and for all 6 functions of patient-centered communication. In addition, patients who reported having these discussions in more detail also reported more intention to change nutrition-related behaviors as a result of having the conversation with their doctor. In 2003, the US Preventive Service Task Force concluded that there is insufficient evidence to recommend nutrition-related counseling in primary care settings (Newland, 2003). It is important to continue studies like this to build the evidence-base for the efficacy of nutrition-related discussions in a routine care context.

This study has some key limitations. This was an online, convenience sample and may not be generalizable to the general population. In addition, although there was a strong relationship between nutrition-related discussion and the communication, satisfaction, and behavioral intention, a causal relationship cannot be determined from this cross-sectional design. Patients who have better relationships with their doctors and perceive better communication may be more likely to report having these discussions.

We are also relying on participant recall and perceptions of these discussions which are inherently subjective. What is regarded as discussing a topic in detail for one patient might not be the same for another patient. Future research should combine patient reports with objective coding of nutrition-related discussion frequency and quality. Studying the effect of interventions to increase communication about nutrition on patient perceptions can also support a causal relationship. Despite these limitations and the lack of causal conclusions, the positive relationships indicate a potential benefit of nutrition-related discussions between patients and doctors at routine checkups.
Interestingly, gender did not change the relationship between nutrition-related discussions and perceptions of patient-provider communication. Although female doctors often engage in a more patient-centered communication style (Hall, 1984), the question of gender differences in communication about nutrition or the patient-centered communication between providers and overweight or obese patients had not been extensively studied.

The present study also suggests that these nutrition-related discussions are more likely to occur and in more detail with patients who have higher BMIs. This is in line with previous research in an adolescent population (Klein, et al., 2006). The relationship between these discussions and quality of communication in patients with varying BMIs is important to understand given a small amount of research has demonstrated a negative relationship between patient-centered communication and obesity. The communication between providers and obese patients in these studies shows lower levels of rapport and includes less patient education about key health issues. Communication with obese patients may be less patient-centered because healthcare providers hold similar weight-based stigma as the general population. A vignette study experimentally manipulating the patient as obese or not demonstrated that providers expected the visit with the obese patient to be more of a waste of their time and that they would be less positive towards the patient and that the patient would annoy them more.

This study suggests that it is not just the presence or absence of nutrition-related communication but how much detail the patient perceives. The study suggests a positive association between how in-depth the nutrition-related discussion was between the doctor and patient and the related level of satisfaction a patient has with the doctor’s communication overall. This study has important implications for routine clinical care and medical education. Providers should consider not only the quantity but quality of their discussions about nutrition. It may also lessen provider concerns that having these discussions will harm their relationship with patients or lead to negative patient perceptions of their care.
References


