



Communication Study

Physician–patient communication about dietary supplements

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ABSTRACT

Objective: Describe the content and frequency of provider–patient dietary supplement discussions during primary care office visits.

Methods: Inductive content analysis of 1477 transcribed audio-recorded office visits to 102 primary care providers was combined with patient and provider surveys. Encounters were collected in Los Angeles, CA (2009–2010), geographically diverse practice settings across the United States (2004–2005), and Sacramento, CA (1998–1999).

Results: Providers discussed 738 dietary supplements during encounters with 357 patients (24.2% of all encounters in the data). They mentioned: (1) reason for taking the supplement for 46.5% of dietary supplements; (2) how to take the supplement for 28.2%; (3) potential risks for 17.3%; (4) supplement effectiveness for 16.7%; and (5) supplement cost or affordability for 4.2%. Of these five topics, a mean of 1.13 (SD = 1.2) topics were discussed for each supplement. More topics were reviewed for non-vitamin non-mineral supplements (mean 1.47 (SD = 1.2)) than for vitamin/mineral supplements (mean 0.99 (SD = 1.1); $p < 0.001$).

Conclusion: While discussions about supplements are occurring, it is clear that more discussion might be needed to inform patient decisions about supplement use.

Practice implications: Physicians could more frequently address topics that may influence patient dietary supplement use, such as the risks, effectiveness, and costs of supplements.

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1. Introduction

Over half of all Americans take dietary supplements [1,2], but such supplements may pose significant risks, including potential supplement–drug interactions [3–6], side effects, and other adverse effects [7–11], and may incur unnecessary costs. More than 15 million adults are at risk for interactions between prescription medications and herbal supplements or high-dose vitamins [12]. Furthermore, patients may replace or decrease conventional medication use in favor of a dietary supplement [7,8,13]. Because of these concerns, organizations such as the

United States Food and Drug Administration and National Institutes of Health recommend that patients consult a health professional before starting a dietary supplement [14,15].

Recommendations suggest that physicians engage patients about dietary supplements by inquiring about supplement use, evaluating supplements, discussing available safety and efficacy data, and monitoring for adverse events and therapeutic responses [16,17]. However, these suggestions do not account for potential inadequate physician knowledge about supplements [18], and little is known about what actually transpires during office visits. Some studies have analyzed discussions about complementary and alternative therapies with oncology patients [19] and older patients [20]. But these studies did not focus on dietary supplements, for which there are special safety considerations. In addition, these analyses did not address the actual content of the information exchanged during physician–patient conversations.

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We analyzed three datasets, collected in three different studies during different time periods between 1998 and 2010, to describe the content and frequency of discussions about dietary supplements, and to investigate variations in communication based on supplement type (vitamins/minerals versus non-vitamin non-mineral (NVNM) dietary supplements; the latter may have more potential for medication–supplement interactions).

2. Methods

This study combines data from three separate studies, collected during three different time periods across different geographical areas in the United States. Data also were aggregated to increase the potential number of encounters containing dietary supplement discussions, and to ensure a more complete characterization of dietary supplement conversations. Investigators from each of the three studies first recruited primary care physicians for study participation, and then recruited patients of participating physicians. None of the original study aims involved dietary supplements or complementary and alternative medicine. Each study linked audio recordings of physician–patient encounters to patient and physician survey data. Complete details about each of the studies are described elsewhere [21–23]. The current analyses were approved by the University of California, Los Angeles Institutional Review Board (IRB #11-000924).

2.1. Setting/participants

The first study contained 256 patient encounters with 27 primary care physicians in Southern California (2009–2010), and investigated the impact of an intervention to improve communication about newly prescribed medications. All patient participants were aged 50 and older, spoke English, and had a new, worsening, or uncontrolled problem. The second study included audio recordings from 733 visits to 41 providers (40 physicians, 1 physician's assistant) in twenty geographically diverse settings across the United States (2004–2005). It assessed the effect of an intervention to improve patient question asking. All patients in the study were aged 18 and older and spoke either English or Spanish. The third study was conducted in Sacramento, CA (1998–1999), and contributed 490 interactions with 34 physicians. This study evaluated the relationship of request fulfillment on patient outcomes. Eligible patients were aged 18 and older, and had a new, worsening, or uncontrolled problem, or were “somewhat concerned” about their health. The combined sample consisted of 1479 individual patients and 102 clinicians.

2.2. Definition and classification of dietary supplements

The term “dietary supplement” is often used to denote a wide range of products. In this study, the definition of a dietary supplement came from the Dietary Supplement Health and Education Act of 1994 (DSHEA) [24,25], which states that a dietary supplement is a product containing one or more of the following: “a vitamin, a mineral, an herb or other botanical, an amino acid, a dietary substance for use by man to supplement the diet by increasing the total daily intake, or a concentrate, metabolite, constituent, extract, or combinations of these ingredients.” We refined the DSHEA definition using criteria stipulated in the National Health and Nutrition Examination Survey (NHANES), which suggests including both oral and injectable supplements, and excluding beverages (such as tea), meal replacement beverages, weight loss and performance booster drinks, and food bars [26]. The investigators classified dietary supplements into one of two categories: (1) vitamin or mineral dietary supplement; or (2) NVNM dietary supplement.

2.3. Patient and physician characteristics

Patients and physicians in all three studies completed questionnaires asking about their age, gender, and race/ethnicity. In addition, patients were asked about their educational attainment, and physicians were asked about their practice specialty and years in practice.

2.4. Qualitative analysis of office visits

Transcripts of audio-recorded office visits were analyzed to assess the content and frequency of discussions about dietary supplements. Three investigators with diverse backgrounds (a practicing primary care physician, a medical sociologist, and an applied linguist) formed the coding team. All had experience in qualitative research concerning physician–patient communication.

The coding team first reviewed all transcripts of the audio recordings to identify those containing conversations about dietary supplements. After the initial review, they independently used an iterative review process to develop themes describing the content of all dietary supplement conversations. Recurrent themes were generated from iterative review of the data, and were based on the investigators' clinical experience, and on their previous work on medication-related physician–patient communication. Themes were discussed with other investigators to reach consensus about the list of themes and their definitions. Categorically similar themes were grouped together.

The coding team applied codes representing each of the themes to transcripts containing discussions about dietary supplements. Coding was conducted at the level of the dietary supplements. One coder (JSG) coded all transcripts, a second double-coded 75% (DMT), and a third double-coded the other 25% (DAP). The coders achieved mean Cohen's kappa for inter-rater reliabilities of 0.88 (SD = 0.12) and 0.87 (SD = 0.09), respectively.

Using established methods, visits also were analyzed to determine whether a new medication was prescribed [27], since the prescription of a new medication might engender more discussion about dietary supplements. A new medication was defined as one that the patient had never taken before, or a medication given for an acute symptom or condition, such as an antibiotic or analgesic.

The investigators also applied codes related to the dynamics of the communication exchange. They coded for whether the first mention of each dietary supplement raised during the office visit was initiated by the patient or by the physician. In addition, they categorized the initial discussion of each dietary supplement as being in the context of medication reconciliation, medication initiation, discussion of a patient's treatment plan or symptom, or other conversation.

2.5. Supplement Communication Index

We empirically derived a measure of the quality of conversation about supplements, the Supplement Communication Index (SCI), based on the major themes generated during our transcript analyses. The SCI is analogous to the Medication Communication Index (MCI), which describes the quality of conversations about newly prescribed medications [27]. The SCI is an index ranging from 0 to 5 (a continuous variable) that gives one point for fulfillment of each of five major categories of communication about dietary supplements: (1) reason for taking supplement; (2) how to take supplement; (3) potential risks; (4) effectiveness; and (5) cost/affordability. Higher scores indicate more complete communication. Recognition of supplement discussions is based on qualitative coding and analysis of office visits, and was

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