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Medical reconciliation of dietary supplements: Don't ask, don't tell

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ABSTRACT

Objective: To explore inpatient reconciliation of dietary supplement (DS) use and determine characteristics associated with DS documentation.
Methods: We analyzed DS use among 558 inpatients recruited from the Re-Engineered Discharge clinical trial to identify: (1) if patients self-reported DS and (2) if DS use was documented at admission. We examined socio-demographics for association with documentation using chi squares and *t*-tests. Logistic regression was performed to assess adjusted associations with DS documentation.
Results: Sixty percent reported DS use ($n = 333$). Among users, 36% had admission DS documentation, 20% were asked about use at admission, 18% reported disclosing use to a provider, and 48% reported they would continue to use DS. Overall, 6% of participants were asked, disclosed, and had documentation of DS. Logistic regression revealed increased age associated with lower odds of DS documentation. Identifying as Hispanic or African American reduces DS documentation odds compared to those identifying as white.
Conclusions: There is lack of consistent DS medical reconciliation in the inpatient setting. While more than half of patients used DS prior to hospitalization, most were not asked about use on admission.
Practice implications: This study adds to literature on medical reconciliation which requires that providers inquire and document patient DS use.

1. Introduction

According to the 1994 Dietary Supplement Health and Education Act (DSHEA), a dietary supplement (DS) is intended to supplement the diet; and contains one or more dietary ingredients including vitamins, minerals, herbs or other botanicals, amino acids, and other substances or their constituents. Dietary supplement (DS) use remains prevalent in patient populations who are frequently hospitalized or at risk of hospitalization such as prescription medication users, those with chronic conditions, and the elderly[1–4].

Specific patient populations, especially those hospitalized, may be more susceptible to drug–DS interactions or adverse reactions due to their acute or chronic illness [5,6]. International studies have described DS use by hospitalized patients. For example, Goldstein et al. reported on DS use in an Israeli hospitalized patient population [7]. They found that many clinicians overlook patient DS use. Clinicians with culturally sensitive language can improve DS history taking [8]. Inpatient socio-demographic and clinical factors associated with the presence of medical chart documentation of DS has not been determined. If clinicians are unaware of possible adverse reactions or if they do not document information about use in the medical chart, they may unknowingly provide a treatment plan or prescribe medications that have potential adverse reactions or interactions with DS [9].

The Joint Commission, a non-profit organization that accredits and certifies health care organizations in the United States, defines medications as "any prescription medication, sample medication, herbal remedies, vitamins, nutriceuticals, over the counter drugs, used on or administered to person to diagnose, treat, or prevent disease or other abnormal conditions"[10]. The Joint Commission's National Patient Safety Goal No. 8, Medical Reconciliation Act requires documentation of patient DS use and over-the-counter drugs, just like any other medication. Failure to document opens doors for potential complications due to either DS alone and/or interactions with prescription medications. These standards are

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meant to maintain safe and quality health care practices in health organizations throughout the country. Despite the Joint Commission's standards, there is emerging evidence that rates of DS medical reconciliation are poor [9,11–13].

A study of the 2002 NHIS found that only one-third of patients disclosed their herb use to their physicians [14,15]. Non-disclosure of DS is even higher among racial and ethnic minorities[16]. Barriers in medical encounters may not facilitate disclosure of DS use. Lack of DS disclosure, particularly of self-care practices among minority populations, represents a serious challenge for medical encounter communications. As the use of DS gains popularity among prescription medication users and patients with chronic conditions, there is concern that medical providers may miss diagnosis or make a medical prescribing error.

Additionally, little is known about patient provider communication about DS use among hospitalized prescription medication users and whether health care professionals are correctly asking about, completing medical reconciliation and documenting DS, or discontinuing DS use in the inpatient setting [7,17]. Young et al. reported on a sample of 177 U.S. inpatients, where 52% reported use of non-vitamin/non-mineral dietary supplements and 13% of patients reported that they believed there was nothing wrong with continued use of DS while hospitalized regardless of recommendations provided by inpatient physicians. During the admission process, physicians documented inquiring about DS use only 20% of the time [17].

We performed an analysis of a cohort of low income racially diverse prescription medication users from the re-engineered discharge (RED) clinical trials [18,19]. In this paper, we examined the prevalence of self-reported DS use and the extent to which clinicians inquired and documented DS use in an inpatient setting. Additionally, we explored if certain patient characteristics (age, race, gender, education) could be associated with DS documentation in the medical chart, which may provide information on which types of patients clinicians are addressing DS use with. This paper explores the communication practices between clinicians and hospitalized patients, clinician inpatient documentation practices, and the clinical and patient factors associated with DS documentation in the inpatient setting. Due to increasing literature about the necessity for accurate medical reconciliation of DS, we hypothesize that at least 50% of our study population will have documentation of DS use in their medical record.

2. Methods

2.1. Data collection and outcomes

The data for this analysis were collected by a trained research assistant at enrollment of the re-engineered discharge (RED) clinical trials [18,19]. The study tested a discharge care transition intervention designed for patients on the adult medicine services at Boston Medical Center (BMC), Boston, MA. BMC is an urban teaching hospital, providing care to an underserved, ethnically diverse population of patients. Patients 18 years of age and older and the ability to speak English were included. Patients were excluded if they were: admitted to BMC from a skilled nursing facility or other hospital, admitted for a planned hospitalization, or were on hospital precautions, on suicide watch, deaf, or blind. Data utilized for our analysis reflects baseline data before randomization occurred. This study was approved by the Boston Medical Center Institutional Review Board.

Socio-demographic, clinical, and DS use data were collected at enrollment. Socio-demographic variables included: age (18–29 years, 30–39, 40–49, 50–59, >60); sex; education level (less than high school, high school/equivalent, some college); race (Non-Hispanic Black, Non-Hispanic White, Hispanic/Other (Asian/Pacific Islanders, American Indians); income (none–$9999, $10,000–$29,999, $30,000–$49,999, >$50,000, other/missing/refused); insurance status (private, government/free care); employment status (employed full or part time, disabled, retired); country of birth; homelessness in the last six months (yes or no). Clinical factors included the following: access to primary care provider on admission; Charlson comorbidity index [20]; depressive symptoms, measured with the patient health questionnaire (PHQ-9) and dichotomized: no depressive symptoms, (PHQ score <5); mild to severe depressive symptoms (PHQ score >5) [21].

Participants were asked the following questions about DS use by a research assistant at baseline data collection:

(1) People take herbs, vitamins, minerals, and other non-vitamin supplements for a variety of reasons. By supplement we mean pills, capsules or tablets that have been labeled as a dietary supplement. Have you taken any herbal supplements in the past 12 months?
(2) During your current stay, did a doctor or nurse ASK YOU about your use of herbal supplements?
(3) During your stay, did you tell any doctor or nurse about your use of herbal supplements?
(4) Will you continue to use your herbal supplements when you go home from the hospital?

Additionally participants were asked the exact same four questions about vitamins and minerals.

Medical reconciliation is completed on BMC inpatient units by resident or attending physicians. A review of the reconciled medication list from the medical chart on the admission history and physical was completed for all participants. Prescription medication and DS documentation was independently extracted by a trained research assistant (AF) and the PI (PG). To qualify as a prescription medication user, a participant had to have at least one prescribed medication on their admission history or physical (excluding eye drops, medical devices, or topical creams). We also looked at the number of prescription medications or over the counter medications on the medication list (count). The chart review process assessed documentation at a single point in time. Documentation on the medication list of at least one herb, vitamin, mineral, or other dietary supplement (e.g. fish oil, melatonin) indicated documentation of DS (dichotomous outcome).

2.2. Statistical analysis

To assess correlates with DS documentation, we considered those who self-reported DS use. The DS variable reflects anyone who self-reported as a vitamin, mineral, or herb user. We considered the simple associations between DS documentation and several demographic and clinical factors using chi square tests and *t*-tests. Covariates were selected based on previous studies that demonstrated to predict DS use [22,1]. Using variables with crude *p*-values of 0.2 or less and additionally the number of prescription medications, we created a multivariate logistic regression model. We assessed potential two-way interactions but none were statistically significant. Odds ratios and 95% profile confidence intervals are reported. All analyses were performed using SAS 9.3 (SAS Institute, Cary, NC).

3. Results

A comparison of baseline characteristics between those who were administered the DS questions and those that weren't revealed that frequent hospital utilizers, and those with lower health literacy were less likely to be asked about DS use. Otherwise,