Advice from Complementary and Alternative Medicine Retailers and Pharmacists to Consumers with Symptoms of Undiagnosed Diabetes

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Background

• 38% of American adults reported using complementary and alternative medicine (CAM) in 2007

• Most who use CAM do so for symptom alleviation

• Consumers may seek advice about these products from CAM retailers (CAM-R) and pharmacists

• Prior studies indicate that CAM-Rs provide incomplete or inappropriate advice to actors who ask for treatment advice for a "documented diagnosis"

Purpose

• To examine advice provided by CAM-Rs and pharmacists to a standardized actor who presented with symptoms of underlined undiagnosed Type 1 diabetes

Study Design

Sample

1. Community pharmacies
   • Random sample of 8 pharmacies from 3 national chains (4 in Pittsburgh, PA; 4 in Chapel Hill/Durham, NC)
   • Excluded pharmacies that were independently-owned, had onsite disease management centers, or were affiliated with hospitals/clinics
   • Interviewed 1 licensed pharmacist per site
2. CAM-R stores
   • Random sample of 12 independent or chain CAM-Rs (6 in Pittsburgh, PA; 6 in Chapel Hill/Durham, NC)
      • 6 independent CAM-Rs and 6 from national chains
   • Excluded CAM-Rs affiliated with a practitioner or with an ethnic focus
   • Interviewed 1 CAM-R per site

Data Collection

• Standardized actor
   • 22-year-old thin, Caucasian male carrying a nearly-empty water bottle
   • Casually presented 7 classic symptoms of Type 1 diabetes with indolent onset
      • Malaise, fatigue, poor concentration, increased thirst, frequent urination, increased appetite, weight loss
   • Asked about possible diagnoses and product recommendations
   • Inquired about need for physician follow-up and over what time frame (only if subject did not voluntarily recommend physician visit)

Data Analysis

• Our study focused on 3 primary outcomes:
   1. Recognition of diabetes as a potential diagnosis
      a. Mentioned explicitly or as a part of the differential diagnosis
   2. Recommendation for physician follow-up
      a. Unprompted versus prompted recommendation
      b. Urgent (i.e., less than 1 week) versus not urgent
   3. Recommended products and their monthly costs
      a. Costs calculated by minimum product needed for 1 month, based on subject-recommended dose

Results

	Pharmacies (n = 8)	CAM-Rs (n = 12)
Site Characteristics		
Chain-affiliated store	8	6
Female subjects	6	5
Diabetes Recognition		
Potential (explicitly mentioned diabetes or as part of differential diagnosis)	4	2
Eliminated (explicitly discounted diabetes)	1	0
Did not mention diabetes	3	10
Mean number of diagnoses offered	1	1.25
Alternate diagnoses offered (n)	Malabsorptive disorder (1) Mononucleosis (2)	Adrenal fatigue (3) Mental disorder (3) Toxin buildup (1) Electrolyte deprivation (1) Mold infestation (1) Kidney imbalance (1) Weakened immunity (1) Fibromyalgia (1) Anorexia (1)

	Pharmacies (n = 8)	CAM-Rs (n = 12)
Physician Recommendation		
Suggested visit - unprompted	7 (6 urgent)	3 (2 urgent)
Suggested visit - prompted	1	3
Considered visit unnecessary	0	4
Missing*	--	2
Product recommendations		
Recommended ≥ 1 product	1	9
Mean recommendations (range)	0 (0-1)	1.3 (0-3)
Total monthly cost of products, range†	$13.99	$24.70 - $209.96
Product classifications‡	Vitamin/Mineral (1)	Herbal/Botanical (4) Supplement (4) Vitamin/Herbal (4) Vitamin/Mineral (3)

* Two interviews were terminated before the actor was able to inquire about product recommendations.
† Monthly cost of all products recommended at each site. Prices do not reflect discounts or sales tax.
‡ Product classifications generally follow the convention described by the United States Pharmacopeia.

Ingredients commonly found in recommended products included: Guarana, Ginseng, *Rhodiola rosea* and Ashwagandha root.

Conclusions

Our work provides empirical evidence that the recommendations made by pharmacists and CAM-Rs may be both inappropriate and potentially harmful to patients with time-sensitive illnesses, such as Type 1 diabetes.

Key findings from our study include:
• Under-recognition of diabetes in a young adult with classic symptoms of Type 1 diabetes was common in both pharmacists and CAM-Rs (50% vs. 17%)
• Most pharmacists (75%) recommended that the actor see a physician within a week
• Only 2 of 12 CAMR-s (17%) made an urgent recommendation
   • Additionally, 2 CAM-Rs (17%) explicitly advised against a physician visit
• CAM-Rs recommended expensive products

• Failure to seek proper care and use CAM instead may lead to delays in diagnosis
   • Such delays may increase the likelihood of morbidity, mortality, and higher healthcare costs
• Medical misinformation regarding symptom and disease management is a salient patient safety concern
   • This potential hazard merits attention from the medical and public health communities alike

Limitations

• Unable to audiotape interviews without informed consent from subjects
• Study limited in geographic scope
• Interviewed only 1 subject per site
   • Restricts our ability to note potential heterogeneity in advice across pharmacists or CAM-Rs