

Use, Side Effects & Potential Interactions of Dietary Supplements: Community and Provider Perspectives



Purpose

- To assess usage patterns of dietary supplements in a rural area (Galesburg, IL) based on a random survey of adult residents and compare usage to national trends
- Assess knowledge of health care providers in the same area about dietary supplements.

The Issues

- Complementary and Alternative Medicine (CAM) usage has been steadily increasing
- Most people use CAM with conventional medical therapy rather than in place of it according to the National Center of Complementary and Alternative Medicine (NCCAM) at the National Institutes of Health (NIH), 2002 report
- Many people assume that herbs and supplements are 'safer' because they are natural and are unaware of side effects and potential drug-herb interactions
- Herbs, enzymes, & vitamins are considered "Dietary Supplements and are not regulated by the same standards as pharmaceuticals

Community Survey

- A Pilot Study based on a Simple Random Anonymous Mail Survey was sent to 1,000 Galesburg residents assessing usage patterns and basic demographics. UI Rockford IRB approved the survey process.
- 299 responses were received with 296 completed returned surveys (3 were deceased) for response rate of 30%
- Data were analyzed using Epi-info and results confirmed with the use SPSS

Demographics Characteristics of Respondents Compared to Galesburg Population

Differences: respondents were older, higher % female, and had more completed education

Demographics	Survey Respondents	Galesburg 2000 Census Data
Age 18-45	18.2%	35.2%
Age 46-60	36.85%	17.8%
Age 61-75	25.3%	12.5%
Age >75	19.6%	9.7%
Male	37.8%	50.1%
Female	62.2%	49.9%
EDUCATION <HS	6.8%	20.8%
High School	23%	34.2%
Some College	36.5%	30.2%
Bach/Grad Degree	33.8%	14.9%
INCOME <15,000	12.8%	20.9%
15,000-25,000	24.1%	18.1%
25,000-50,000	33.9%	32.8%
>50,000	29.2%	28.3%

Community Survey Results

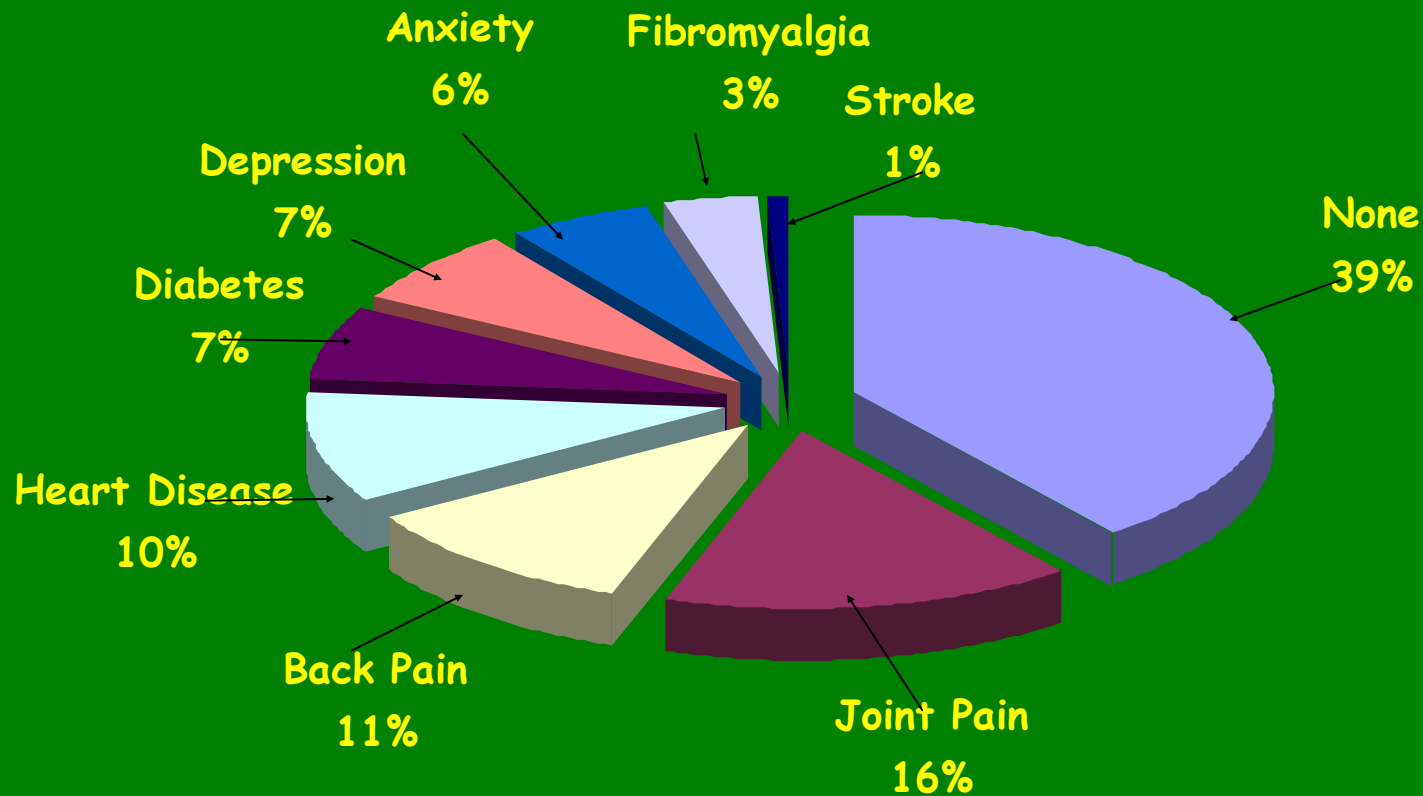
■ NCCAM 2002 DATA

- 18.9% of pop. have used supplements
- More women than men use CAM
- People with higher levels of education use more CAM
- People with health problems, esp. chronic problems such as pain are more likely to try CAM in addition to traditional medicine
- Only 4-6% of people that use CAM do so exclusively. The rest also use traditional allopathic medical care

■ GALESBURG SURVEY

- 52.7% of respondents have tried supplements- 62% of females and 38% of males
- People with higher education are more likely to use supplements (details follow)
- Persons with higher incomes are more likely to use supplements (details follow)
- 54% of persons being treated for a health condition have used herbal supplements

Health Conditions of Supplement Users



Percentage of Use in Each Category

EDUCATION

Herbal Use	<High School	High School	Some College	Bach/Grad Deg
Yes	35%	39.7%	59.3%	58%
No	65%	60.3%	40.7%	42%

INCOME

Herbal Use	<15,000	15,000-25,000	25,000-50,000	>50,000
Yes	34.3%	56.1%	53.8%	56.3%
No	65.7%	43.9%	46.2%	43.8%

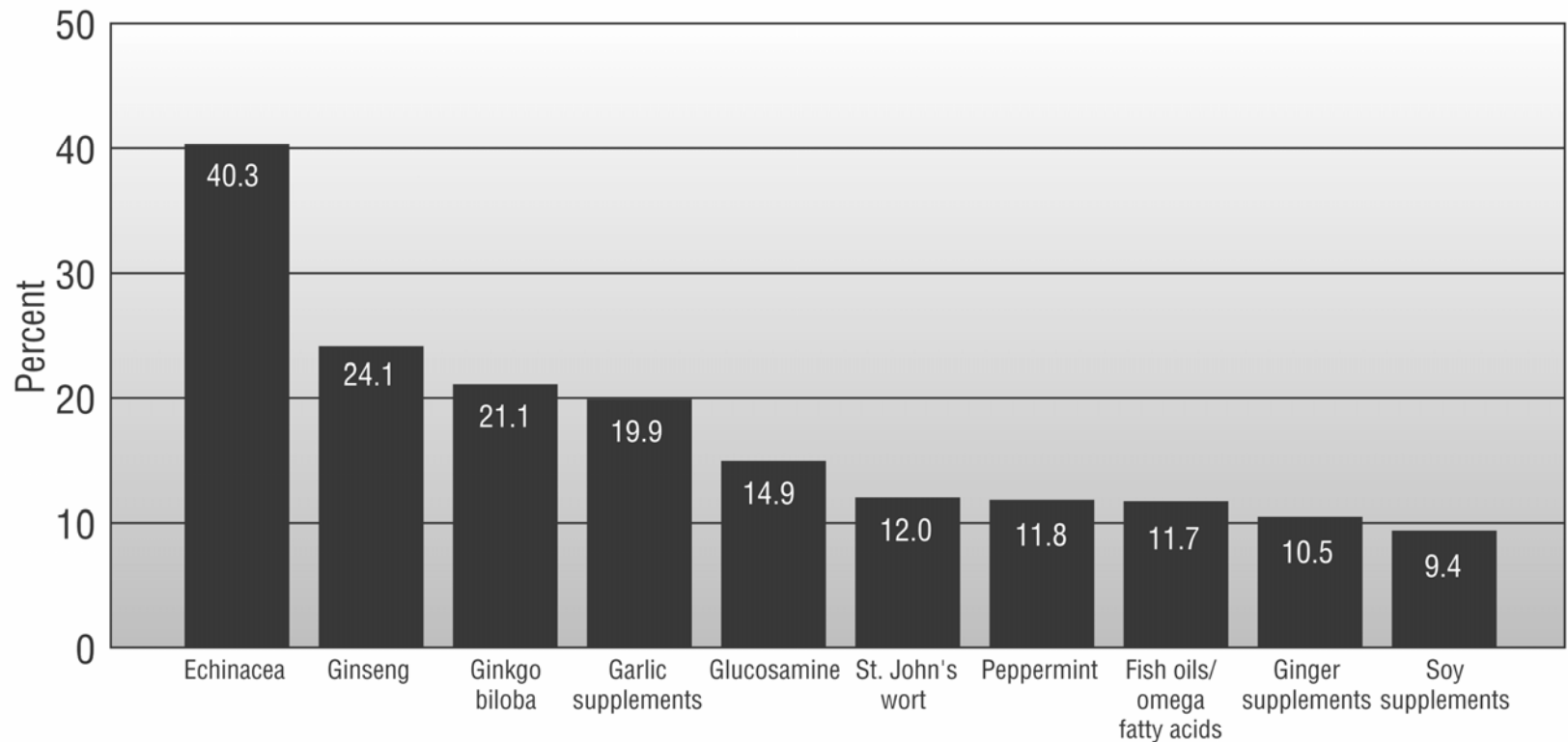
AGE

Herbal Use	18-30	31-45	46-60	61-75	>75
Yes	50%	52.6%	59.6%	54.7%	37.9%
No	50%	47.4%	40.4%	45.3%	62.1%

Supplement Use Analyzed by Age, Education & Income

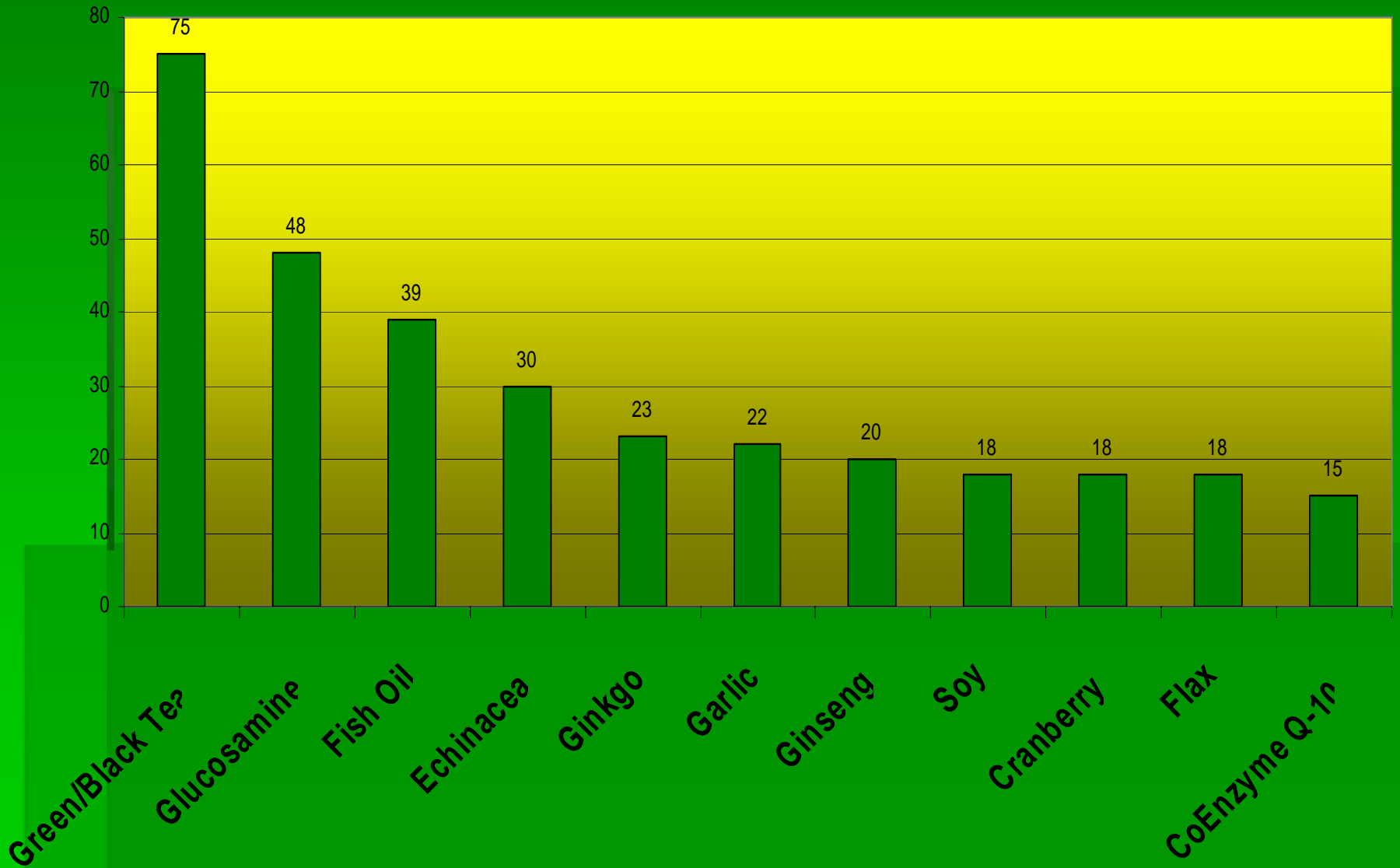
VARIABLE ANALYZED	P-value	SIGNIFICANCE
Supplement Use by Age	0.1190	No Significance
Supplement Use by Income	0.1385	No Significance
Supplement Use by Education	0.0176	Statistically Significant
Supplement Use by Education stratified by sex- female	0.0276	Statistically Significant
Supplement Use by Education stratified by sex- male	0.7246	No Significance

Top 10 Natural Products Used by Adult CAM Users—2002



Source: Barnes P, Powell-Griner E, McFann K, Nahin R. CDC Advance Data Report #343. Complementary and Alternative Medicine Use Among Adults: United States, 2002. May 27, 2004

Top Supplements Galesburg

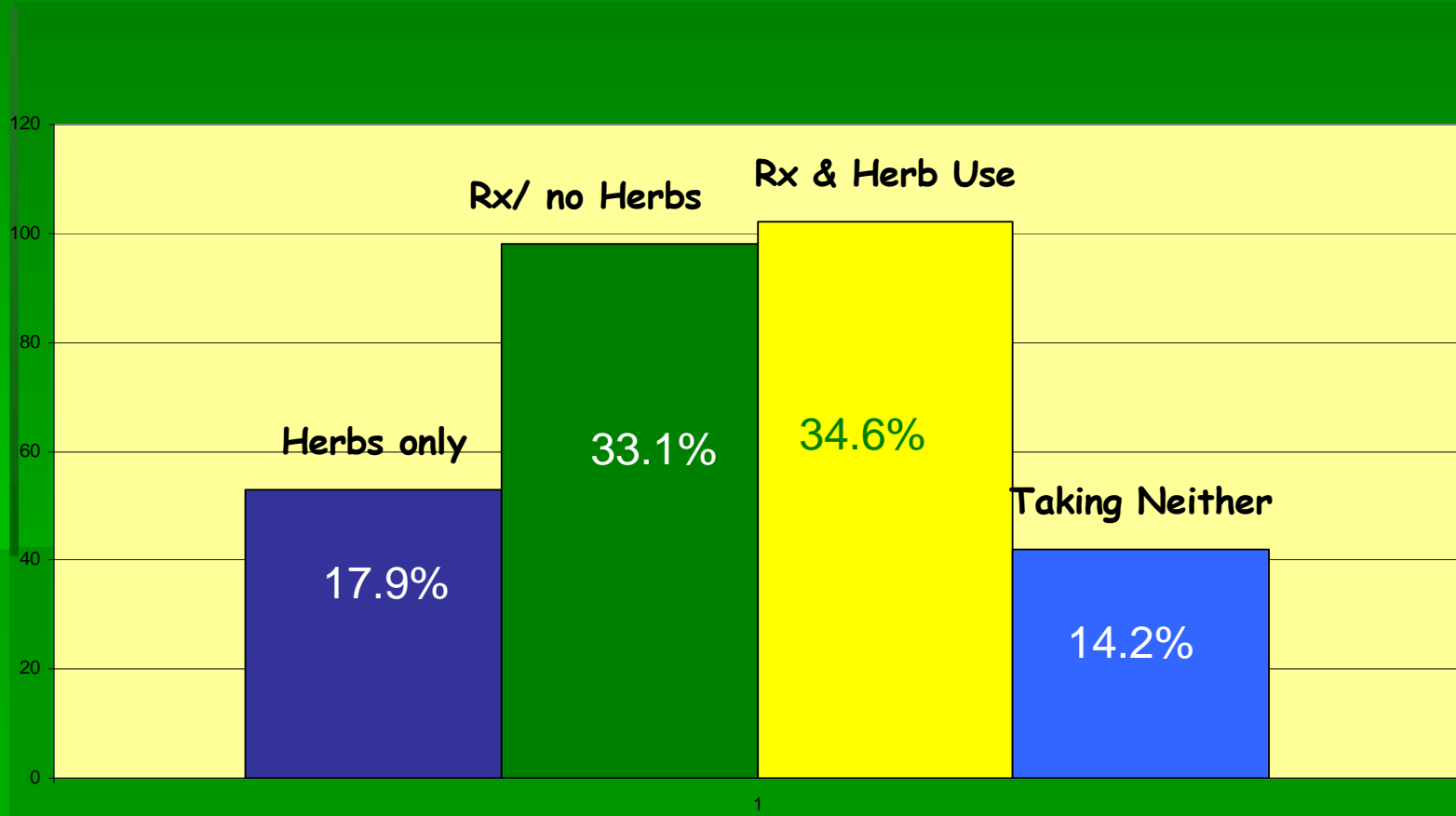


Examples of Side Effects & Herb-Drug Interactions

- Many herbs can cause increased bleeding, esp. Ginkgo & Garlic, and should be stopped before surgery
- St. John's Wort has interactions with many drugs including antidepressants, HIV drugs, and Warfarin
- Herbs such as Kava and Comfrey, have caused liver toxicity
- Some Supplements can increase or decrease blood sugar potentially causing unpredictable blood sugar control in diabetics
- More Information is available on the FDA's Adverse Reporting website

www.cfsan.fda.gov/~dms/ds-warn.html

Potential for Interactions Between Drugs (Rx) and Herbal Supplements- 34.6% of Respondents Use Both



Study Weaknesses

- Respondents may be more inclined to return their survey if they were supportive of Herbal Supplement Use
- National Data indicate that women and people with higher education were more likely to utilize Supplements. Because the respondents included a higher percentage of women and people with higher education, this could have artificially inflated the number of Herbal Supplement Users
- Some Herbal Supplements listed can also be used in cooking or as a recreational drink such as tea. Respondents may have misunderstood the concept of a supplement and marked them as used as a supplement when their use is actually common daily usage.

Assessment of Healthcare provider knowledge

- A convenience sample of 14 Healthcare providers including 6 physicians, 7 nurses and 1 nurse practitioner, at the OSF Family Practice clinic in Galesburg was used. The survey process was approved by the campus IRB.
- The clinic serves over 10,000 Galesburg residents- Galesburg pop. 33,706
- A pretest to assess current knowledge was administered. 39% of questions were answered incorrectly.

Healthcare Provider Education Implemented

- Findings of the Galesburg community survey were presented
- An education program was presented highlighting common side effects and herb-drug interactions
- A post-test consisting of the same pretest items was again presented following the education
- 17% of the questions were answered incorrectly showing a 22% improvement in healthcare provider knowledge

Breakdown of Answers Before and After Healthcare Provider Education Session

Subject	Percent Correct Before Education	Percent Correct After Education
Herbs Causing Bleeding	63%	84.3%
Herbs That Decrease Blood Sugar	35.7%	82.2%
Drug Interactions with St.John's Wort	60%	81.4%
Herbs Used for Sleep	85.7%	85%
Herbal Regulations	96%	100%
Herbs Causing Liver Toxicity	53.6%	82.2%

Subject Areas to Focus on for Future Provider Education about Dietary Supplements

- A knowledge of supplements that cause bleeding would be very pertinent, especially for patients with upcoming surgical procedures
- Supplements that can interfere with Diabetes control would be important for providers to be aware of
- Knowing specific herb-drug interactions would be impractical, but having a resource available and having a mechanism in place to ensure that patients are asked about supplement use would be key measures to promote detection of possible interactions

Some Suggestions for Healthcare Provider Supplement Education

- MEDWATCH is an e-mail newsletter from the FDA that highlights alerts, advisories and warnings about supplements- healthcare professionals can subscribe at no cost
- Having professional organizations develop CME presentations on supplements with the focus on side effects and interactions would help to decrease some of the bias that many providers have against the use of herbals

Areas of Future Research

- Further research on healthcare provider knowledge, as well as research into how well healthcare providers elicit supplement usage patterns from patients during patient visits, especially pre-surgical screenings
- Telephone or in-person surveys could help eliminate any confusion on whether supplements are used for health reasons, or during common daily usage such as cooking