

# Emerging Issues Associated with HIV Patients Seeking Advice from Health Food Stores

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## ABSTRACT

**Objectives:** To ascertain the recommendations, training and education of health food store employees and determine how they communicate the costs, benefits and risks associated with natural health products for the HIV/AIDS community.

**Methods:** Four male research assistants, posing as asymptomatic HIV-positive individuals, inquired of employees of all retail health food stores in a major Canadian city as to what is recommended for their condition. The research assistants asked about product costs, side effects, potential drug interactions and efficacy. They also inquired as to employee education related to Complementary and Alternative Medicine (CAM) and noted whether employees asked about which conventional medications they were taking and whether they recommended that the subjects seek physician or CAM provider advice.

**Results:** A total of 32 stores were included. Eight store employees (25%) offered no advice; eight (25%) inquired whether the subjects were currently taking medications; six (19%) suggested visiting a physician; and eight (25%) suggested visiting a CAM provider. A total of 36 different products (mean 2.3 per employee) were recommended with considerable variability in product evidence and cost. The education of the employees varied from post-graduate education (n=3), to undergraduate degree (n=3), college level (n=5) in CAM, or no formal education in CAM (n=21).

**Conclusion:** There was considerable heterogeneity in advice on natural food products provided by employees of natural food stores and, in general, these individuals had limited formal training in CAM. The products they recommended had limited evidence supporting their efficacy and in some instances were potentially harmful and had considerable costs. The findings of this study support the need to further examine how best to regulate this growing component of the health care system.

*La traduction du résumé se trouve à la fin de l'article.*

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The use of natural health food products has been steadily increasing in Canada.<sup>1</sup> Concerns about the safety of these products led Health Canada to draft regulations governing the manufacture and distribution of these remedies.<sup>2</sup> Currently, natural health food products are largely unregulated. We sought to examine the kinds of advice provided by natural health food stores, and the qualifications of their employees. We focused on advice specifically related to HIV infection, where there is a high documented rate of natural health food product use, and for which interactions with certain pharmaceutical agents may pose health risks.<sup>3</sup> We aimed to determine the recommendations, training and education of health food store employees and determine how they communicate the costs, benefits and risks associated with natural health products for the HIV/AIDS community.

## METHODS

We located all health food stores in a major Canadian city, using the most recent edition of the Yellow Pages telephone directory, as well as by word-of-mouth. Only retail natural health products sales outlets were included in our study. We specifically excluded Asian herbal stores due to language difficulties, our lack of product knowledge and difficulties of standardization. Additionally, we excluded regulated pharmacies that sell natural health products.

Four healthy research assistants, without HIV, posed as simulated patients. Each was instructed to wait in the store until approached by an employee. Each research assistant was to explain that he had been diagnosed with HIV infection within the past 6 months, but was otherwise healthy and asymptomatic. Each research assistant explained that he did not have a physician, and asked the store employee what he/she might recommend for his HIV condition. All research assistants were instructed to memorize and follow a structured, pre-tested questionnaire relating to product use, dosage and cost, as well as the employee's education about natural health food remedies (questionnaire available upon request). The research assistants were asked to not voluntarily divulge any other information about their HIV condition. The research assistants were trained and

TABLE I

## Frequency, Dosage and Monthly Cost of Products Recommended by 24 Natural Health Food Store Employees

Product Name	No. Stores Providing Recommendation	Recommended Daily Dosage	Product Description	Cost for a Monthly Supply
Moducare	7	3 TB*	Sterol (botanical)	\$28-47
Multivitamin	6	1 TB	Vitamins	\$16-40
Vitamin C	5	1000 mg	Vitamins	\$14
Acidophilus	4	3-6 TB	Probiotic	\$24-60
Co-Q 10 80mg	3	2 TB	Co-factor	\$13-73
Whey protein	3	1.2-1.6 g	Amino acids	\$34-40
Flax Seed Oil	3	1 tsp†	Ess. Fatty acids	\$14
Garlic	3	1 TB	Botanical	\$17
N-acetylcysteine	2	2 TB	Nutrient	\$20
Alpha Lipoic Acid	2	2 cups	Ess. Fatty acid	\$23
Ip-6 (Inositol-hexaphosphate)	2	3-6 TB	Botanical	\$24
Astragalus	2	2 TB	Botanical	\$8-18
Shitake mushroom extract	2	2 TB	Mushroom extract	\$13
Olive leaf extract	2	2000 mg	Botanical	\$19
Noni juice	2	30 mL	Botanical	\$25-35
B-Complex	2	1 TB	Vitamins	\$25
Flor-essence	1	3 TB	Botanical mixture	\$21
L-Carnatine	1	Not available	Mineral	Not available
Aloe vera juice	1	2 cups	Botanical	\$30
Milk Thistle	1	3 TB	Botanical	\$18
Selenium	1	200 mg	Mineral	\$14.5
Caprylic acid	1	3 TB	Nutrient	\$35
Ascorbic acid flush	1	Not available	Vitamins	Not available
Colostrum	1	2 cups	Dietary supplement	\$47
Pycnogenol	1	2 cups	Botanical	\$32
Grapeseed extract	1	2 cups	Botanical	\$20
D-Fraction Miatake	1	2 TB	Mushroom extract	\$19-90
Bitter melon	1	3 TB	Botanical	\$25
Reishi mushroom extract	1	2 TB	Mushroom extract	\$19
MGN-3 (Combination mushroom product)	1	2 TB	Mushroom extract	\$77
Glutamine powder	1	1000 mg	Nutrient	\$105
Testosterone hormone	1	Not available	Hormone	Not available
Immune + (Combination herbal product)	1	2-4 TB	Botanical mixture	\$16
Creatine	1	5 g	Nutrient	\$30
Greens + (Combination herbal product)	1	3 tsp	Botanical mixture	\$38

\* TB = tablespoon

† tsp = teaspoon

rehearsed their introduction to reduce variability of the scenario.

Dosage and costs of the products were based on the recommendations of the store employees. The research assistants noted the product cost and daily dosage to ascertain monthly costs. The health food stores were debriefed after the investigation, and were invited to contact us if they had any concerns or questions about the study. At this time, if they requested that the data obtained from their store be withdrawn from the study, we respected their wishes.

Ethical approval for this study was granted by the Canadian College of Naturopathic Medicine Institutional Review Board with specific reference to Tri-Council guidelines Article 2.1 (c). We specifically inquired about whether deception was appropriate for this study. The IRB granted approval having agreed that the participants were at little conceivable harm and that with prior consent, the study would not have been possible. The IRB believed that the benefit to the public outweighed any potential harm to the participants.

## RESULTS

A total of 32 health food stores were included in our analysis out of a possible 69 advertised in the Yellow Pages. The major reasons for exclusion of stores included being Asian herbal stores or health fitness stores. One store exercised their option to withdraw from participation. A total of 36 different products were recommended by 24 (75%) store employees, with a mean of 2.3 recommended products per store (Table I). Eight (25%) employees did not make a recommendation. The suggested typical dosage and related monthly financial costs of these remedies are listed in Table I. Eight employees (25%) inquired about other currently prescribed medications, six (19%) suggested that the simulated patient visit a physician, while eight employees (25%) recommended visiting a Homeopathic or Naturopathic practitioner.

The educational training of the health food stores of employees varied considerably (Table II). Thirteen employees (40%) did not have any structured education in the field of natural health and sciences, while

eight employees (25%) had received some in-store training. Five employees (16%) had received college level education in complementary and alternative medicine.

## DISCUSSION

We observed considerable variability in the recommendations and expertise of individuals working in natural health food stores. There is little or no clinical evidence to support the use of many of these products in the treatment of HIV infection.<sup>4</sup> Additionally, many of these products carry with them considerable costs. Moreover, only 25% of health food store employees inquired about current use of other medications, despite growing evidence of possible interactions between alternative health products and pharmaceutical agents.<sup>5</sup> For example, three stores recommended taking garlic tablets, despite documentation that they may reduce protease inhibitor levels by up to 50%.<sup>5</sup>

Our study has some important limitations. The consistency of data may be limited by approaching only one employee at

**TABLE II**  
**Level of Training of 32 Health Food Store Employees**

In-store Alone	No. (%) with Specific Level of Training			
	Community College Education in Complementary and Alternative Medicine	University Health Sciences Undergraduate Degree	Post Graduate Health Sciences Degree*	None
8 (25)	5 (16)	3 (9) 3 BSc. Nutrition	3 (9) 1 Foreign trained physician 1 Naturopath 1 Veterinarian	13 (41)

\* Represents a university or community college postgraduate degree in a health science discipline.

each store, however, this most accurately simulates a real life situation. It is also difficult to measure employees' knowledge of HIV through a brief encounter and the quality of informative literature provided to the simulated patients varied substantially. It is possible that the responses from employees varied according to each data gatherer. While this study was conducted in one city in Canada, we believe that the results may be widely transferable as health food stores are not regulated in any province.

The growing body of evidence examining health food shop recommendations suggests that the issues observed in our study are similar in other provinces and other countries.<sup>6-17</sup> These studies have examined issues such as diagnosis by employees and recommendations for end-of-life care and consistently found the potential for harm from health food store employees' recommendations and that there are important financial costs associated with the recommended therapies.<sup>6,17</sup>

While several employees recommended discussions with healthcare professionals and several discussed safety and drug interactions, others did not. Many patients are attracted to NHP use because it is natural, believing that the products are less toxic than prescription medication. However, recent reports on adverse effects of NHP's identify that several products once considered safe may be harmful.<sup>5,18</sup> These risks are increased when the products are used in large doses or chronically. The variability in information regarding appropriate dosages of these products provided by the health food store employees also increases the likelihood for misuse. Additionally recommendations such as "immune-boosting" and "cleansing" may be misleading to patients. We observed that the education of employees recorded in the studies

regarding NHPs was heterogeneous with several employees expressing that formal education was unnecessary. Others considered that working in the health-food environment for several years was experience enough. Consumers may also be influenced by employees who wear white coats, as they may make assumptions about employee levels of medical training.<sup>6,19</sup>

Natural health product use has steadily increased among individuals with HIV and AIDS, who often explore alternatives to current pharmaceutical medical therapies. In one U.S. study, approximately one third of patients believed that complementary therapies act synergistically with anti-retroviral therapy or reduce HIV-related symptoms, while 21% expected that complementary medicines could provide a cure to their illness. These individuals spent an average of \$938 US per year on complementary therapies.<sup>20</sup>

Our findings support the current regulations introduced by Health Canada to improve labeling information of these products to demonstrate proof of safety.<sup>2</sup> Our data also question whether there is a need to further evaluate and/or regulate how health food stores counsel customers and promote certain therapeutic agents. One option might be to require that health food store employees receive formal training about the potential toxicity of certain remedies, interactions with other medications, and the evidence supporting the use of specific agents for certain conditions. Educational interventions aimed at employees and the public may help to augment co-operation rather than stimulate antagonism.<sup>6</sup> Until such recommendations are considered, users of natural health products should remain aware of the limited data on the efficacy and safety of these products, and their potential interactions with other medications.

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## RÉSUMÉ

**Objectifs :** Établir avec précision la formation et l'instruction des employés de magasins d'aliments naturels et les recommandations qu'ils dispensent et déterminer comment ils communiquent aux personnes vivant avec le VIH/sida les coûts, les avantages et les risques associés aux produits naturels.

**Méthode :** Quatre adjoints à la recherche, se prétendant séropositifs pour le VIH, mais asymptomatiques, ont demandé aux employés de tous les magasins de détail d'aliments naturels d'une grande ville canadienne ce qu'ils recommanderaient vu leur état de santé. Les adjoints se sont informés des coûts des produits, de leurs effets secondaires, de leur efficacité et des interactions médicamenteuses éventuelles. Ils ont aussi interrogé les employés sur leur formation en médecines parallèles et noté si ceux-ci leur demandaient quels médicaments conventionnels ils prenaient, et s'ils leur conseillaient d'obtenir l'avis d'un médecin ou d'un praticien en médecines parallèles.

**Résultats :** L'enquête a porté sur 32 magasins. Huit employés (25 %) n'ont donné aucun conseil; huit autres (25 %) ont demandé aux sujets s'ils prenaient actuellement des médicaments; six (19 %) leur ont suggéré de consulter un médecin; et huit (25 %) leur ont suggéré de consulter un praticien en médecines parallèles. On a recommandé en tout 36 produits différents (2,3 par employé en moyenne), avec des écarts considérables dans la justification et le coût de ces produits. Le niveau d'instruction des employés variait; certains avaient un diplôme universitaire supérieur (n=3), de premier cycle (n=3) ou de niveau collégial (n=5) en médecines parallèles; d'autres n'avaient pas fait d'études en médecines parallèles (n=21).

**Conclusion :** Les conseils des employés de magasins d'aliments naturels présentaient des écarts considérables, et dans l'ensemble, ces personnes avaient peu étudié les médecines parallèles. L'efficacité des produits recommandés n'était pas éprouvée, et certains produits étaient potentiellement nocifs et très chers. Les résultats de l'étude confirment le besoin de pousser la recherche sur les meilleurs moyens de réglementer ce volet en pleine expansion du système de soins de santé.

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