How well do pharmacists know their patients? A case report highlighting natural health product disclosure

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Introduction

Natural health products (NHPs), a broad category that includes vitamins, minerals, herbs, homeopathic remedies, traditional medicines, probiotics, amino acids and fatty acids, are used to maintain and promote health, as well as to prevent or treat illness.¹ Many consumers report using NHPs because they are perceived to be healthier or safer than conventional drugs.² A Health Canada survey found that 73% of Canadians have reported using at least 1 NHP, and 20% believe NHPs are without adverse effects.² As NHPs are available without a prescription, patients often use them to treat their medical conditions, based on advice obtained from the Internet, media sources and/or friends/family.³ Patients also do not consistently disclose NHP use to health care providers, nor are they routinely asked about such use.⁴⁻⁶ This lack of communication may have serious implications; for example, some NHPs, such as kava, have been associated with hepatotoxicity,⁷ and St. John's wort may interact with a number of prescription medicines that may lead to failed therapeutic outcomes or increased risk of toxicity.⁸ Use of these products without health professional input could be inappropriate or lead to delayed recognition of adverse reactions if they occur.

Community Pharmacy SONAR (Study Of Natural health product Adverse Reactions) is a multicentre study investigating adverse events (AEs) associated with the use of prescription drugs, NHPs and their concurrent use through the implementation of active surveillance. Consenting patients who reported an AE while

also taking an NHP (both alone or concurrently with prescription drugs) were contacted by a research pharmacist (CN) to collect a detailed medical history. Detailed methods are available elsewhere.⁹ This study was approved by the Human Research Ethics Board at the University of Alberta. Here, we present a detailed case history of a SONAR study participant. The patient's medication history is presented in a stepwise fashion to illustrate what can be learned when a pharmacist further questions a patient about NHP use—the initial information available is typical of routine pharmacy practice; the subsequent additive information can be learned when additional details are sought by the pharmacist.

Case description

A 58-year-old woman presented to her community pharmacy to pick up a refill of a prescription medication. The patient's medical conditions included hypertension and osteopenia; she had also been diagnosed with "adrenal exhaustion" by her naturopath. The patient was an otherwise healthy nonsmoker, nondrinker who regularly exercised. No health concerns were raised with the pharmacist at the visit.

Patient's current medication history as listed on pharmacy computer record:

- Amlodipine 5 mg once daily

Upon questioning the patient about her NHP use, using the screening questions from the

Community Pharmacy SONAR study (Figure 1), the patient revealed taking additional health products that were previously unknown to the pharmacist.

Patient's self-reported current medication history after being prompted about NHP use at the counter by the pharmacist:

1. Amlodipine
2. Multivitamin
3. Fish oil
4. Calcium
5. Phytoestrogen

Using the same study form (Figure 1), the pharmacist then questioned the patient about whether she had experienced any adverse event(s) in the past month. The patient reported that she had been experiencing severely painful dyspepsia that often resulted in a complete cessation of normal daily activities until the pain subsided. This event first began 1 year before and was ongoing, occurring 1 to 5 times a month.

The patient agreed to participate in the Pharmacy SONAR study and signed written consent to be contacted for an in-depth interview by the study pharmacist (CN). During the interview, the patient was asked to gather all prescription drugs, over-the-counter products and NHPs that she was currently taking. This interview revealed that the patient was taking 24 NHPs along with her 1 prescription medication (Table 1).

Most NHPs were combination products that contained a total of more than 55 individual NHP ingredients. A number of these ingredients were included in more than 1 combination product (Table 1). A large proportion of the NHPs that the patient was taking had been purchased online "to maintain good health."

Discussion

Many patients cared for in community pharmacy settings take 1 or more prescription drugs while self-prescribing multiple other undisclosed health products. In combination, these products may provide more than the accepted daily doses of certain chemical or natural ingredients, increasing their risk of toxicity or interactions.

The patient described in this case report had been taking numerous NHPs for approximately

FIGURE 1 Community Pharmacy SONAR screening questions

1 year, which coincides with the onset of her dyspepsia. With so many different products, and no further data available, this AE could not be attributed to any single product. Although some authoritative sources stating recommended daily doses of NHPs are available, we did not compare the daily doses the patient reported taking with these since it is unlikely that any source would recommend taking this number of products concurrently even at the recommended doses. This patient was informed by the study pharmacist about the possible risks of taking multiple health products concurrently and was advised to seek guidance from her pharmacist and/or physician.

This case highlights the risks of self-prescribed NHPs and the failure to disclose their use.^{3,5} When asked why they do not disclose complementary medicine use, patients report feeling that their health care providers will disapprove of the use of such products or not give their full attention to the topic, as well as the fear of losing access to NHPs.³ Pharmacists should be aware of this and are encouraged to provide a Best Possible Medication History (BPMH) for all patients in their care.¹⁰ The BPMH Guidelines for Medication Reconciliation distributed by the Ontario College of Pharmacists clearly indicate the need to specifically ask about NHP use in addition to prescription and over-the-counter drugs.¹⁰ Busse et al.¹¹ found that while 41.5% of patients surveyed did not disclose NHP use to their physicians, the single most predictive factor to disclosing this information was their physician asking them specifically about NHP use. Community Pharmacy SONAR suggests a similar opportunity exists for pharmacists—of the 3000 patients screened thus far, none has refused to disclose NHP use to their pharmacists when asked.

TABLE 1 Patient's self-reported current medication history following an in-depth interview by a pharmacist

Health product	Dosing regimen (as reported by patient) Route: Oral	No. of active ingredients in product	List of active ingredients and doses (in 1 dosage form, as listed by manufacturer on packaging)
DAILY USE			
Norvasc (Pfizer)	1 tablet once daily	1	Amlodipine 5 mg
Active Calcium Chewables (Usana)	2 tablets once daily	3	Calcium (citrate and carbonate) 200 mg Vitamin D ₃ (cholecalciferol) 2.5 µg Magnesium (oxide, citrate) 100 mg Silicon (calcium silicate) 2.25 mg
Active Calcium Plus (Usana)	1 tablet twice daily	5	Calcium (citrate and carbonate) 200 mg Magnesium (citrate, hydrolyzed vegetable protein) 100 mg Vitamin D ₃ (cholecalciferol) 2.5 µg Vitamin K (phylloquinone) 15 µg Silicon (calcium silicate) 2.25 mg
BiOmega (Usana)	1 capsule twice daily	4	Natural fish (sardine, anchovy) body oil (standardized to 235 mg DHA and 290 mg EPA) 1000 mg Vitamin D ₃ (cholecalciferol) 100 IU
Cal-Mag-Zinc Liquid (Albi Naturals)	2 tablespoons once daily	6	2 tablespoons provide Vitamin D ₃ (cholecalciferol) 400 IU Calcium (calcium citrate, tricalcium phosphate) 1200 mg Phosphorus (mono- and tricalcium phosphate) 238 mg Magnesium (citrate) 600 mg Zinc (gluconate) 15 mg Ionic sea minerals (chloride 102 mg, sodium 86 mg, sulphate 8 mg, boron 140 µg, potassium 74 µg)
Coquinone 100 (Usana)	1 capsule once daily	2	Coenzyme Q-10 30 mg Alpha-lipoic acid 12.5 mg
Ginkgo-PS (Usana)	1 tablet once daily	1	<i>Ginkgo biloba</i> leaf extract 25 mg Soy lecithin (enriched with phosphatidylserine) 125 mg
Health Pak 100 (Usana)	1 packet twice daily	38	Vitamin A (pro-Vitamin A—1.5 mg Retinol Activity Equivalents) 3 mg Vitamin C (Poly C—calcium, potassium, magnesium and zinc ascorbates) 650 mg Vitamin D (cholecalciferol) 500 IU Vitamin E (d-alpha tocopheryl succinate) 200 IU Vitamin K (phylloquinone) 45 µg Vitamin B ₁ (thiamine hydrochloride) 13.5 mg Vitamin B ₂ (riboflavin) 13.5 mg Niacin (niacin, niacinamide) 20 mg Vitamin B ₆ (pyridoxine hydrochloride) 16 mg Vitamin B ₁₂ (cyanocobalamin) 100 µg Folic acid 500 µg Biotin 150 µg Pantothenic acid (calcium d-pantothenate) 45 mg Calcium (citrate, carbonate) 335 mg

TABLE 1 (continued)

Health product	Dosing regimen (as reported by patient) Route: Oral	No. of active ingredients in product	List of active ingredients and doses (in 1 dosage form, as listed by manufacturer on packaging)
DAILY USE			
			Iodine (potassium iodide) 150 µg Magnesium (citrate, hydrolyzed vegetable protein chelate, oxide) 250 mg Zinc (citrate) 10 mg Selenium (L-selenomethionine, hydrolyzed vegetable protein chelate) 100 µg Copper (gluconate) 1 mg Manganese (gluconate) 2.5 mg Chromium (polynicotinate, picolinate) 150 µg Molybdenum (citrate) 25 µg Olive fruit extract (<i>Olea europaea</i>) 15 mg Rutin 60 mg Green tea leaf extract—decaffeinated (<i>Camellia sinensis</i>) 7.5 mg Quercetin 12 mg Hesperidin 12 mg Pomegranate fruit extract (<i>Punica granatum</i>) 5 mg Cinnamon bark extract (<i>Cinnamomum cassia</i>) 2 mg Bilberry fruit extract (<i>Vaccinium myrtillus</i>) 500 µg Mixed natural tocopherols 17 mg Inositol 75 mg Choline bitartrate 50 mg N-acetyl L-cysteine 50 mg Bromelain (<i>Ananas comosus</i>) 25 mg Alpha-lipoic acid 100 mg Coenzyme Q10 (ubiquinone) 4.9 mg Turmeric root extract (<i>Curcuma longa</i>) 7.5 mg Lutein 300 µg Lycopene 500 µg Grape seed extract (<i>Vitis vinifera</i>) 45 mg Broccoli flower concentrate (<i>Brassica oleracea</i>) 7.5 mg Resveratrol (isolated from <i>Polygonum cuspidatum</i>) 15 mg Silicon (hydrolyzed vegetable protein chelate) 4.25 mg Vanadium (citrate) 20 µg Boron (citrate) 1.5 mg
HepaPlus (Usana)	1 tablet once daily	9	Choline bitartrate 125 mg Milk thistle fruit extract (80% silymarin) 80 mg N-acetyl L-cysteine 75 mg Alpha-lipoic acid 67 mg Broccoli flower extract 25 mg Green tea leaf extract 15 mg Olive fruit extract 15 mg Turmeric root extract 15 mg Biotin 75 µg

TABLE 1 (continued)

Health product	Dosing regimen (as reported by patient) Route: Oral	No. of active ingredients in product	List of active ingredients and doses (in 1 dosage form, as listed by manufacturer on packaging)
DAILY USE			
Kardovite (Nutrition Plus Products)	1 drop once daily	7	Hawthorn Garlic Cayenne Milk thistle Bilberry Ginkgo Valerian 100 mL of Kardovite drops consists of 40% hawthorn, 20% garlic, 10% cayenne, 10% milk thistle, 10% bilberry, 5% ginkgo and 5% valerian; no exact doses available from the manufacturer
Norwegian Kelp (Natural Factors)	1 tablet once daily	1	Norwegian kelp 575 mg (providing 750 mg iodine)
Phytoestrin (Usana)	1 tablet once daily	5	Soy isoflavones 14 mg Black cohosh extract (<i>Cimicifuga racemosa</i> , standardized to 2.5% triterpine glycosides) 50 mg Chasteberry powder (<i>Vitex agnus-castus</i>) 50 mg Liquorice root extract (<i>Glycyrrhiza glabra</i>) 30 mg Dong quai extract (<i>Angelica sinensis</i>) 15 mg
Poly C (Usana)	1 tablet twice daily	1	Vitamin C (calcium, potassium, magnesium and zinc ascorbates) 600 mg
Procosa-2 (Usana)	2 tablets twice daily	6	Glucosamine hydrochloride (from fermented <i>Aspergillus niger</i> chitin) 500 mg Vitamin C (calcium ascorbate, ascorbyl palmitate) 75 mg Manganese (gluconate) 1.67 mg Potassium (sulphate) 31.43 mg Magnesium (sulphate) 14.5 mg Meriva (bioavailable curcumin complex) 82.5 mg
Proflavanol C 100 (Usana)	2 tablets once daily	2	Vitamin C (Poly C—calcium, potassium, magnesium and zinc ascorbates) 300 mg Grape seed extract (<i>Vitis vinifera</i> , seeds) 100 mg
Strontium-2 (Albi Naturals)	2 tablets once daily	1	Strontium (elemental) 340 mg
STRS (Naturpharm)	2 capsules twice daily	13	Vitamin C (ascorbic acid) 200 mg Vitamin B ₅ (d-pantothenic acid) 200 mg Zinc (citrate, fumarate, glutarate, malate, succinate) 7.5 mg Chromium (citrate, fumarate, glutarate, malate, succinate) 25 mcg Adrenal cortex (bovine) 50 mg Adrenal whole gland (bovine) 50 mg Wild oat (<i>Avena sativa</i> seed) 25 mg Siberian ginseng (<i>Eleutherococcus senticosus</i> root) 25 mg Liquorice (<i>Glycyrrhiza glabra</i> root) 25 mg Chinese schizandra (<i>Schisandra chinensis</i> fruit) 10 mg

TABLE 1 (continued)

Health product	Dosing regimen (as reported by patient) Route: Oral	No. of active ingredients in product	List of active ingredients and doses (in 1 dosage form, as listed by manufacturer on packaging)
DAILY USE			
			Acerola (<i>Malpighia puniceifolia</i> berry) 10 mg Total cellulase activity 20.0 FCC units In a protein powder base 75.0 mg
Vision-Ex (Usana)	1 tablet once daily	5	Vitamin C (calcium, magnesium, potassium and zinc ascorbates; ascorbyl palmitate) 250 mg Zinc (citrate, ascorbate) 5 mg Bilberry fruit extract (<i>Vaccinium myrtillus</i> , 100:1, equiv. to 2.5 g fresh fruit) 25 mg Marigold flower extract (<i>Tagetes erecta</i> standardized to 5 mg lutein and 0.17 mg zeaxanthin) 100 mg Zeaxanthin 0.83 mg
Vitamin D (Usana)	1 tablet once daily	1	Vitamin D ₃ (cholecalciferol 25 µg) 1000 IU
OCCASIONAL USE			
Essiac Tea (Essiac West)	10 mL (in combination with 30 mL Flor-Essence tea mixed in 1 cup of hot water) Once daily for 3 weeks; consumes 4 times per year	4	Exact recipe varies by manufacturer. Ingredients typically include: Burdock root Slippery elm bark Sheep sorrel leaves Indian rhubarb root
Flor-Essence Tea (Flora Health)	30 mL (in combination with 10 mL Essiac tea mixed in 1 cup of hot water) Once daily for 3 weeks; consumes 4 times yearly	8	Exact recipe varies by manufacturer. Ingredients typically include: Burdock root Slippery elm bark Sheep sorrel leaves Turkish rhubarb root Watercress herb Kelp Blessed thistle herb Red clover blossom
Nutrimeal Energy Bars (Usana)	1 bar once daily (2-3 times per week)	NA	Various depending on type/flavour. Natural health products include protein blend (soy protein isolate, toasted soy pieces, whey protein concentrate)
Nutrimeal Energy Shakes (Usana)	1 pouch (mixed in beverage of choice) once daily (2-3 times per week)	NA	Specific details NA from manufacturer

TABLE 1 (continued)

Health product	Dosing regimen (as reported by patient) Route: Oral	No. of active ingredients in product	List of active ingredients and doses (in 1 dosage form, as listed by manufacturer on packaging)
OCCASIONAL USE			
Organic Green Tea with Ginger (Traditional Medicinals)	1 tea bag (in 1 cup of hot water) (irregular use)	3	Green tea leaf (<i>Camellia sinensis</i>) 780 mg Proprietary blend 520 mg Blackberry leaf Ginger rhizome
Organic Nighty-Night Tea (Traditional Medicinals)	1 tea bag (in 1 cup hot water) (irregular use)	9	Passionflower herb (<i>Passiflora incarnata</i>) 350 mg Chamomile flower (<i>Matricaria recutita</i>) 350 mg Catnip herb (<i>Nepeta cataria</i>) 175 mg Hop strobile (<i>Humulus lupulus</i>) 70 mg Spearmint leaf (<i>Mentha spicata</i>) Sweet orange peel (<i>Citrus sinensis</i>)

DHA, docosahexaenoic acid; EPA, eicosapentaenoic acid; FCC, Food Chemical Codex; NA, not available.

Effective communication does not mean that we have to agree with our patient's choices¹²; rather, in opening discussion to inform patients, we will gain their trust in disclosing their health care choices in a nonjudgmental environment. Doing so will allow pharmacists to provide guidance to their patients that will reduce their risk of experiencing NHP and/or medicine-related harm.

It is important for pharmacists and patients to remember that any substance that is pharmacologically active can also pose health risks (i.e., "natural" does not inherently mean "safe").^{3,13} Approximately one-third of Canadians use 3 or more NHPs concurrently, in addition to nearly half of Canadians taking prescription drugs and NHPs together.^{14,15} The more health products a patient takes at the same time, the higher the theoretical risk of experiencing interactions and other adverse drug reactions.^{13,16} In the Community Pharmacy SONAR study, 7.5% of those patients taking prescription drugs and

NHPs concurrently in Ontario reported having experienced an AE.⁹

Conclusion

Many patients take multiple NHPs concurrently, as well as with concomitant prescription medicines, and without the advice of a health care provider. The case presented describes a patient who was consuming more than 55 individual NHP ingredients without any disclosure to her pharmacist or physician. The stepwise disclosure of NHP use in this case in response to further questions highlights the need for pharmacists to open the lines of communication surrounding NHP use with their patients to prevent unnecessary harm from occurring and to improve their patients' overall therapeutic outcomes. Incorporating the use of a systematic tool such as the one used in Pharmacy SONAR may be a helpful way for pharmacists to obtain a thorough disclosure from their patients surrounding NHP use and possible adverse reactions.⁹ ■

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