THE JOURNAL OF ALTERNATIVE AND COMPLEMENTARY MEDICINE
Volume 13, Number 2, 2007, pp. 263–269

DOI: 10.1089/acm.2006.6280

Complementary and Alternative Medicine (CAM) in Palestine: Use and Safety Implications

ANSAM F. SAWALHA, Ph.D

ABSTRACT

Aim: Utilization of complementary and alternative medicine (CAM) is exponentially rising. There are no published data available about the attitude and use of CAM in Palestine. The purpose of this study was to investigate the attitude, pattern of use, and reasons for CAM utilization among a random sample of people in north Palestine.

Methods: A questionnaire was used to carry out the objective of the study. The questionnaire was distributed to a random sample of people in north Palestine during the month of October 2005. The questionnaire included three sections: demographic factors and attitude toward CAM, types of CAM encountered by the respondents in the last year, and reasons that motivated CAM use. Data collected from the returned questionnaire were coded and entered into the Statistical Package for Social Sciences program (SPSS) version 10 (SPSS SOftware, Inc., Chicago, IL).

Results: 72.8% of respondents have used at least one type of CAM in the last year. CAM users were mainly middle-aged, low-income, educated women. Herbal therapy, prayers, and honey were the most commonly utilized types of CAM. Respondents have used CAM mainly to treat respiratory and gastrointestinal disorders. Respondents have utilized CAM mainly because they believed that it is all natural and safe.

Discussion and conclusions: CAM utilization in Palestine is very common. Some of the types of CAM used in Palestine are common elsewhere, whereas other types were unique to this area. The herbal products used by the respondents were mainly collected from nature. Safety of such products is questionable, and contamination cannot be ruled out. Awareness of potential adverse effects and proven benefits of various types of CAM needs to be raised.

INTRODUCTION

Complementary and alternative medicine (CAM) is a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine.[1] Interest in CAM is exponentially increasing in many countries and among different people,[2] with billions of dollars spent on it.[3,4] Many differences set CAM apart from modern medicine, such as the following: (1) modern medicine is organ specific, whereas CAM uses a holistic approach, (2) modern medicine is preferred in cases of emergencies, whereas CAM excels in the treatment of chronic diseases; and (3) modern medicine prefers patients to be passive, whereas CAM requires the patient to take a highly active part.[5]

The exact reasons for the popularity of CAM are complex and change with time and place. They may also vary from therapy to therapy, and they are different from one individual to another. No single determinant of the present popularity of CAM exists, but there is a broad range of interacting positive and negative motivations. Positive motivating factors for CAM include perceived effectiveness, perceived safety, philosophic beliefs, control over treatment, and good patient/therapist relationship.[6] Negative motivat-

Poison Control and Drug Information Center (PCDIC), An-Najah National University, Nablus, Palestine.

ing factors for conventional medicine include possible serious adverse effects, poor doctor–patient relationship, insufficient time with doctor, long waiting lists, and rejection of science and technology.[6]

CAM is considered an integral part of the health practices in Palestine. Previous studies among Bedouins in the Negev desert revealed that there were 81 species of herbal plants used for the treatment of 115 diseases and ailments.[7] Other studies have included a detailed classification of the healing potential of medicinal plants in the West Bank and Jordan.[8,9] The efficacy of different CAM techniques is yet to be investigated; however, some has been already addressed. For example, honey has been proven to have antibacterial activity.[10,11] Different CAM techniques have been proven effective in reducing blood pressure, blood glucose level, and lower back pain.[12–14] Various herbs possess anti-inflammatory and antioxidative properties, and are currently being used to treat asthma, Alzheimer's disease, inflammatory bowel disease, rheumatoid arthritis, and atherogenesis.[15]

Many may develop the impression that CAM is safer than modern medicine because of the errors that occur when using the latter.[16–18] However, CAM products are capable of inducing adverse reactions that may be either intrinsic or extrinsic. Intrinsic reactions are concerned with the pharmacologic effect or the idiosyncratic one. Extrinsic results from failure of good handling and manufacturing procedures such as misidentification, lack of standardization, contamination, substitution, adulteration, and others.[19] There are risks associated with the use of CAM. Both minor and major toxicities have been documented including emesis, hypersensitivity reactions, cardiovascular events, neurologic dysfunction, hepatic and renal failure, and the development of malignant disease.[20,21] Interactions between herbal and prescription medications have been widely described and reported.[22,23]

Many studies, in different populations, have been conducted to examine the attitudes and profiles of people using CAM, and their reasons. Some studies have also been conducted to link the use of CAM with adverse health effects. Of these studies, none has been done in the West Bank of Palestine. This study was conducted in order to highlight the attitudes and use of CAM among a random sample in northern Palestine.

METHODS

This is a survey study using a questionnaire as a tool to assess attitude, use, and reasons for CAM utilization. The survey was conducted in northern Palestine during the month of October 2005. The questionnaire had three types of questions: multiple-choice questions, yes/no, and short-answer questions. The questionnaire clearly stated the definition of both traditional and alternative medicine in the native language. The questionnaire was divided into three major sections: demographic and attitudes toward CAM, types of CAM used, and the reasons for using CAM.

Participants were asked to answer the entire questionnaire to the best of their knowledge and recalling ability. The demographic information section included questions regarding age, gender, education, income, place of residence, and lifestyle. This section also contained questions related to the attitude of the participants toward CAM. Participants were asked to state whether they believed in CAM, whether they have used CAM within the past year, and whether they have informed their physician about their use of CAM or not. In the second section of the questionnaire, participants were presented with a list of CAM therapies for them to choose what they have used in the past year. Also, this section contained questions regarding the types of disease or ailment for which they have used CAM. Participants were also asked how they learned about CAM, and where they obtained what they used. In the third section of the questionnaire, 11 possible reasons for using CAM were presented as a list, and the participants were asked to check one or more, depending on their opinion. The questionnaire was distributed daily during the month of October 2005 in the northern Palestine area. The process of distribution and collection was done by hand and in the same day.

All variables were coded, entered, and statistically analyzed using the Statistical Package for Social Sciences program (SPSS® version 10 SPSS Software Inc., Chicago, IL) for Windows (Microsoft Corp., Redmond, WA). Frequency tables were made using descriptive analysis. Chi-square was used to test for difference, and significance was considered to exist when the p value is less than 0.05.

RESULTS

A total of 312 questionnaires were completely and correctly filled out and returned to the researcher—a response rate of 78%. More than half of the respondents were young, female, educated, lived in the city, and had low monthly income. When asked about their lifestyle habits, approximately more than one fourth of the respondents indicated that they smoke and more than half do not practice exercise (Table 1).

The majority of respondents had a positive attitude toward CAM and were willing to use CAM when not feeling well. Actually, 72.8% of the respondents have used CAM during the last year. Statistical analysis indicated that age was a significant ($p < 0.05$) factor affecting the use of CAM. Respondents among the age category of 30–49 years utilized CAM more than other age categories. Other demographic and social factors were not significant in affecting CAM use. However, utilization of CAM was more common among women, university graduates, and low-income respondents. Utilization of CAM was similar among respon-

Table 1. Demographic Description of the 312 Respondents

Variable	*Overall No. (%)*	*Percent users (n = 227)*	*Not users (n = 85)*	p *value*[a]
Age				
<18	14 (4.5)	35.7	57.1	$p = 0.02$
18–29	160 (51.3)	72.5	26.9	
30–49	94 (30.1)	77.7	22.3	
>50	43 (13.8)	62.8	25.6	
Gender				
Male	144 (46.2)	67.4	31.9	$p = 0.13$
Female	167 (53.5)	77.8	21.6	NS
Education				
high school or below	80 (25.6)	70	28.8	$p = 0.38$
University	212 (67.9)	75.7	24.1	NS
Graduate	18 (5.8)	61.1	38.9	
Place of living				
City	172 (55.1)	73.3	26.2	$p = 0.81$
Village	123 (39.4)	72.4	26.8	NS
Camp	16 (5.1)	75	25	
Income				
<2000 NIS	145 (46.5)	76.6	22.8	$p = 0.31$
2000–5000	119 (38.1)	71.4	28.6	NS
>5000	30 (9.6)	60	36.7	
Exercise				
Yes	128 (41.0)	71.9	28.1	$p = 0.37$
No	179 (57.4)	74.3	25.7	NS
Smoke				
Yes	83 (26.6)	66.3	33.7	$p = 0.23$
No	226 (72.4)	75.7	24.3	NS

[a]*p* value was determined by chi-square.
NS, not significant; NIS, New Israel: shekel.

dents regardless of place of living or exercise habits. Smoking did not significantly affect CAM utilization, but it was noted that nonsmokers constituted a higher percentage compared to smokers (Table 1).

Analysis of the reported data indicated that there were at least 14 different types of CAM encountered. An average of 3.2 (standard deviation = 1.6, range 1–9) CAM types were used per respondent. A total of 154 respondents have used three or fewer types of CAM. The majority of the respondents (60) have used four types of CAM, whereas a total of 51 have used ≥5 CAM types. The types of CAM reported included herbals, prayers, honey, exercise, vitamins, and others. Herbal therapy and prayers were the most common types of CAM used, whereas bloodletting and moxa were the least common (Table 2).

A variety of diseases and ailments were the driving force for CAM utilization. CAM was used for minor ailments such as gastrointestinal (GIT) upset and for major diseases such as cardiac-related problems. Respiratory system disorders and GIT problems were the most common causes for utilization of CAM. On the other hand, urinary system problems and diabetes mellitus were the least common causes for CAM utilization. There was a significant correlation ($p = 0.039$) between the number of health conditions treated and the number of CAM types used (Table 3). As the number of diseases or ailments increase, the number of CAM types used decreases.

A total of 98 respondents were using CAM for respiratory problems. The majority of those patients were using herbal therapy to cure their respiratory problems. GIT problems were the second most common health condition for which respondents use CAM. Respondents with GIT problems were also using herbal therapy for their condition followed by animal products (mainly honey). Urinary tract problems and diabetes mellitus were the least common types of disease for which respondents use CAM. Overall, herbal therapy was the most commonly used type of CAM (Table 4).

Regarding the reasons that may have motivated people to use CAM, more than one reason was chosen by most respondents. Safety, being natural, and the strong belief in the power of cure were the strongest reasons that motivated CAM use. Saving money, lack of trust in modern medicine, and curiosity were the least common reasons stated by the CAM users (Table 5). When asked about their source of information, most respondents said that they were mainly advised by their relatives and friends to use CAM. CAM users obtained their products directly from nature or purchased it from herbalist shops. It is also important to mention that more than half of the respondents failed to inform their physician about their CAM use.

Table 2. Types of CAM Used by the Respondents

CAM method	*No.*	*%*
Herbal therapy	206	24
Prayers, reading holy book	143	16.6
Honey	136	15.8
Exercise	72	8.4
Folk remedy	71	8.3
Vitamins and minerals	67	7.8
Fasting	64	7.5
Listening to music	46	5.4
Al-Hijama	22	2.6
Animal products	12	1.4
Acupuncture	8	0.9
Magic	7	0.8
Moxa	4	0.4
Blood letting	1	0.1

CAM, complementary and alternative medicine.

DISCUSSION

The baseline characteristics of CAM users in Palestine are similar to those in other parts of the world being mainly middle-aged, educated, low income, and females.[2,24–27] Contrary to other published data, our results showed that neither smoking nor place of living was influential on CAM utilization.

Our data show that more than two thirds of the respondents have used at least one type of CAM in the last year. In other parts of the world, different utilization rate of CAM were found.[5,28–30] Different reasons could be cited for the popularity of CAM among the Palestinians. First, CAM constitutes a major part of the local Arabic and Islamic heritage, with various Arab and Moslem scientists enriching our knowledge with their expertise in CAM, especially herbal medicine.[9,31,32] Second, most CAM methods are less expensive, more cost effective, and easily accessible compared to modern medicine. This becomes a relevant factor given the low income of residents in Palestine. Third, the mountains in Palestine are covered with plants among which more than 700 were noted for their use as medicinal plants.[33–35] The fourth reason that had led to the popularity of CAM is the proven efficacy of many of its techniques, especially the herbal medicine. Efficacy and safety of several CAM techniques have been addressed by several investigators.[5,36–41] Many curative ingredients are found in medicinal plants that have been proven to be valuable as primary or supplemental therapies when carefully applied.[42]

Herbal therapy and prayers were the most commonly used CAM among the respondents in our study. Similarly, herbal therapy and prayers were common types of CAM used by Canadians and Americans.[43,44] The types of herbs that respondents used were mainly obtained directly from nature. This implies a great risk because of misidentification or contamination with heavy metals or pesticides, and consequently it could result in toxicity. The second major source of herbs was the herbalist shops, which raises the issue of substitution or adulteration. In a study by Ernst in 2003 regarding the adverse effects of CAM, it was found that most of the adverse events were associated with herbal medications. Inadequately regulated herbal medicines may contain toxic plant material, be contaminated with heavy metals, or be adulterated with synthetic drugs. Serious adverse effects of herbs were reported that included bradycardia, brain damage, cardiogenic shock, diabetic coma, encephalopathy, heart rupture, intravascular hemolysis, liver failure, respiratory failure, toxic hepatitis, and death.[45] Honey, the third type of CAM in our study, was rarely mentioned in other CAM studies carried out elsewhere. The importance of honey as a type of CAM comes from its religious value, where it was narrated in the Holy Book as a cure for diseases. However, the use of honey is sometimes overpracticed, and its religious value is misinterpreted. For example, many people use honey for diabetes mellitus and gastric ulcer, which could worsen their condition. More recently, honey is being used topically for treatment of skin wounds and burns.[46,47] Another type of CAM that is used in Palestine but rarely used elsewhere is bloodletting and moxa. Both are present as part of the Arab culture and heritage. The two methods bear risks of bleeding and infection.

Our data indicated that respondents used CAM mainly based on advice from their friends and relatives. Only few of respondents ($< 5\%$) had asked for professional medical advice. This may constitute a risk potential because of the lack of scientific and medical intervention. Most respondents have used CAM because they believed it is natural and will benefit them. Others indicated that CAM would improve their health in general and will complement modern medicine. Some of the respondents indicated that they used CAM

Table 3. Reported Health Conditions for Which CAM Used

%	*No.*	*Disease*
28.9	98	RS
26.3	89	GIT
12.1	41	MS
10.0	34	CNS
5.3	18	CVD
5.3	18	Skin
2.7	9	US
1.5	5	DM
7.9	27	Others[a]
	339	Total

CAM, complementary and alternative medicine; RS, respiratory disorders; GIT, gastrointestinal disorders; MS, musculoskeletal disorders; CNS, central nervous system disorders; CVD, cardiovascular diseases; US, urinary system; DM, diabetes mellitus.

[a]Includes ear, nose, throat, and eye disorders.

Table 4. Analysis of the Disease States and the Types of CAM Used

CAM	RS (n = 98)	GIT (n = 89)	MS (n = 41)	CNS (n = 34)	CVD (n = 18)	Skin (n = 18)	US (n = 9)	DM (n = 5)	Others (n = 27)
Herbal therapy	92	80	27	28	17	14	7	4	21
Vitamins & minerals	23	17	15	7	6	7	2	1	12
Prayers	48	45	24	22	11	11	5	3	17
Animal products[a]	65	59	23	24	9	14	6	0	6
Folk remedies	30	25	15	12	8	6	3	3	6
Music	14	17	9	12	2	3	1	0	8
Hijama, moxa, acupuncture, and blood letting	8	8	14	5	5	3	2	2	8
Exercise	28	25	16	12	6		2	0	12
Fasting	19	24	10	9	6	5	3	2	9
Magic	0	2	0	1	0	0	0	0	2

[a]Mainly honey.

RS, respiratory disorders; GIT, gastrointestinal disorders; MS, musculoskeletal disorders; CNS, central nervous system disorders; CVD, cardiovascular diseases; US, urinary system; DM, diabetes mellitus; others, includes ear, nose, throat, and eye disorders.

because they did not like taking medications or visiting modern medicine clinics. Previous studies have examined the profiles of people who use alternative therapies, their reasons for choosing these therapies, and their perceived efficacy of the treatments compared to conventional medicine.[5,27,43,48,49] Studies have found that people use CAM not because they are dissatisfied with conventional medicine but mainly because CAM is more congruent with their own values, beliefs, and philosophic orientation toward health and life.[2]

It can be concluded that many people in Palestine use CAM. This may have several implications for public health. CAM techniques are less expensive compared to modern medicine and this will enable low-income families to spare their money to pay for the more expensive modern medicine techniques. Herbal therapy has been extensively used in Palestine; however, such remedies have not been extensively studied, researched, evaluated, or explored. Such medicinal plants may be a great resource for various new pharmaceutic compounds and they may open up new opportunities for investigators. Exporting such herbs to countries that lack them may be a future option to be considered, given the fact that the Palestinian land is very rich in them.

CONCLUSIONS

Utilization of CAM was found to be common in north Palestine. Types of CAM used were those encountered in other areas of the world, although some unique ones were present. Safety issues were not highly considered among CAM users in northern Palestine. We highly recommend conducting detailed studies about the utilization of CAM in all parts of Palestine and to investigate the efficacy and toxicities or adverse health effects that CAM types could produce. The awareness level should be elevated among CAM users, and the medical curriculum should be expanded to include sections related to CAM because it is very popular in this part of the world.

Table 5. Reasons Why Respondents Used CAM to Treat Their Health Problems

Reason	No.	%
I used it because it is all natural	207	66.3
I will benefit from it	145	46.5
CAM will improve my health and not only cure my disease	108	34.6
CAM complements modern medicine	104	33.3
Modern medicine will cause fewer side effects	62	33.3
I do not want to take regular medicine	81	26.0
I do not like visiting clinics or hospitals	78	2.0
CAM gives them more hope to solve my health problem	43	13.8
Modern medicine failed to cure them	36	11.5
I want to try a different type of therapy	35	11.2
I do not trust doctors and medical services	32	10.3
To save money	29	9.3

CAM, complementary and alternative medicine.

REFERENCES

1. Zollman C, Vickers A. What is complementary medicine? BMJ 1999;319:693–696.
2. Astin JA. Why patients use alternative medicine: Results of a national study. JAMA 1998;279(19):1548–1553.
3. Eisenberg DM, Kessler RC, Foster C, et al. Unconventional medicine in the United States. N Engl J Med 1993;328: 246–252.
4. Eisenberg DM, Davis RB, Ettner SL, et al. Trends in alternative medicine use in the United States, 1990–1997: Results of a follow-up national study. JAMA 1998;280:1569–1575.
5. Larsen HR. Alternative medicine: Why so popular? International Health News issue 93, Sept. 1999. Online document at: www.yourhealth.com/alternative_medicine.html
6. Ernst E. The role of complementary and alternative medicine. BMJ 2000;321:1133–1135.
7. Friedman J, Yaniv Z, Dafni A, Palewitch D. A preliminary classification of the healing potential of medicinal plants based on a rational analysis of an ethnopharmacological field survey among Bedouins in the Negev desert, Israel. J Ethnopharmacol 1986;16:275–287.
8. Ali-Shtayeh MS, Yaniv Z, Mahajna J. Ethnobotanical survey in the Palestinian area: A classification of the healing potential of medicinal plants. J Ethnopharmacol 2000;73:221–232.
9. Abu-Irmaileh BE, Afifi FU. Herbal medicine in Jordan with special emphasis on commonly used herbs. J Ethnopharmacol 2003;89:193–197.
10. Al-Waili NS. Investigating the antimicrobial activity of natural honey and its effects on the pathogenic bacterial infections of surgical wounds and conjunctiva. J Med Food 2004;7:210–222.
11. Al-Waili NS. Clinical and mycological benefits of topical application of honey, olive oil and beeswax in diaper dermatitis. Clin Microbiol Infect 2005;11:160–163.
12. Edwards QT, Colquist S, Maradiegue A. What's cooking with garlic: Is this complementary and alternative medicine for hypertension? J Am Acad Nurse Pract 2005;17:381–385.
13. Yip YB, Tse SH. The effectiveness of relaxation acupoint stimulation and acupressure with aromatic lavender essential oil for non-specific low back pain in Hong Kong: A randomised controlled trial. Complement Ther Med 2004;12: 28–37.
14. Vuksan V, Sievenpiper JL, Koo VY, et al. American ginseng (Panax quinquefolius L) reduces postprandial glycemia in nondiabetic subjects and subjects with type 2 diabetes mellitus. Arch Intern Med 2000;160:1009–1013.
15. Kaplan M, Mutlu EA, Benson M, et al. Use of herbal preparations in the treatment of oxidant-mediated inflammatory disorders. Complement Ther Med (in press). Online document at: elsevierhealth.com/journals/ctim
16. Anderson I. Hospital errors are number three killer in Australia. New Scientist June 10, 1995:P5. Online document at: www.newscientist.com/search
17. Bates DW, Cullen D, Laird N, et al. Incidence of adverse drug events and potential adverse drug events: Implications for prevention. JAMA 1995;274:29–34.
18. Lazarou J, Pomeranz B, Corey P. Incidence of adverse drug reactions in hospitalized patients: A meta-analysis of prospective studies. JAMA 1998;279:1200–1205.
19. Myers SP, Cheras PA. The other side of the coin: Safety of complementary and alternative medicine. Med J Aust 2004; 181:222–225.
20. Markman M. Safety issues in using complementary and alternative medicine [review]. J Clin Oncol 2002;20(18 suppl): 39S–41S.
21. Colson CR, De Broe ME. Kidney injury from alternative medicines. Adv Chronic Kidney Dis 2005;12:261–275.
22. Williamson EM. Drug interactions between herbal and prescription medicines [review]. Drug Saf 2003;26:1075–1092.
23. Cupp MJ. Herbal remedies: Adverse effects and drug interactions. Am Fam Physicians 1999;59:1239–1245
24. Conboy L, Patel S, Kaptchuk TJ, et al. Sociodemographic determinations of the utilization of specific types of complementary & alternative medicine: An analysis based on a nationally representative survey sample. J Altern Complement Med 2005;11:977–994.
25. Del Mundo WF, Shepherd WC, Marose TD. Use of alternative medicine by patients in a rural family practice clinic. Fam Med 2002;34:206–212.
26. Cuellar N, Aycock T, Cahill B, Ford J. Complementary and alternative medicine (CAM) use by African American (AA) and Caucasian American (CA) older adults in a rural setting: A descriptive, comparative study. BMC Complement Altern Med 2003;3:8.
27. Giannelli M, Cuttini M, Arniani S, et al. Non–conventional medicine in Tuscany: Attitudes & use in the population. Epidemiol Prev 2004;28:27–33.
28. Bensoussan A. Complementary medicine—where lies its appeal? Med J Aust 1999;170:247–248.
29. Fisher P, Ward A. Complementary medicine in Europe. BMJ 1994;309:107–111.
30. Yamashita H, Tsukayama H, Sugishita C. Popularity of complementary & alternative medicine in Japan: A telephone survey. Complement Ther Med 2002;10:84–93.
31. Al-Bitar DAM. The Collection of the Content of Medicinal and Food Items [in Arabic] Cairo: Bolak.
32. Alantaki DO. The Reminder, or the Reminder to Wise People and the Miraculous Collector [in Arabic] Cairo: Bolak.
33. Silva F, Abraham A. The potentiality of the Israeli flora for medicinal purposes. Fitoterapia 1981;52:195–200.
34. Dafni A, Yaniv Z, Palewitch D. Ethnobotanical survey of medicinal plants in northern Israel. J Ethnopharmacol 1984;10: 295–310.
35. Ali-Shtayeh MS, Yaghmour RMR, Faidi YR, et al. Antimicrobial activity of 20 plants used in folkloric medicine in the Palestinian area. J Ethnopharmacol 1998;60:265–271.
36. Dham S, Shah V, Hirsch S, Banerji MA. The role of complementary and alternative medicine in diabetes. Curr Diab Rep 2006;6:251–258.
37. Lee HJ, Lee EO, Rhee YH, et al. An oriental herbal cocktail, ka-mi-kae-kyuk-tang, exerts anti-cancer activities by targeting angiogenesis, apoptosis and metastasis. Carcinogenesis 2006; 27:2455–2463.
38. Hanje AJ, Fortune B, Song M, et al. The use of selected nutrition supplements and complementary and alternative medicine in liver disease [Review]. Nutr Clin Pract 2006;21:255–272.
39. Tan G, Alvarez JA, Jensen MP. Complementary and alternative medicine approaches to pain management. J Clin Psychol 2006;62:1419–1431.

40. Kasper S, Anghelescu IG, Szegedi A, et al. Superior efficacy of St John's wort extract WS 5570 compared to placebo in patients with major depression: A randomized, double-blind, placebo-controlled, multi-center trial [ISRCTN77277298]. BMC Med 2006;4:14.
41. Ali-Shtayeh MS, Abu Ghdeib SI. Antifungal activity of plant extracts against dermatophytes. Mycoses 1999;42:665–672.
42. Halberstein RA. Medicinal plants: historical and cross-cultural usage patterns [Review]. Ann Epidemiol 2005;15:686–699.
43. Ramsay C, Walker W, Alexander J. Alternative medicine in Canada: Use and public attitudes. Public Policy Sources 1999;21:3–31.
44. Tindle HA, Davis RB, Phillips RS, Eisenberg DM. Trends in use of complementary & alternative medicine by US adults: 1997–2002. Altern Ther Health Med 2005;11:42–49.
45. Ernst E. Serious adverse effects of unconventional therapies for children and adolescents: A systematic review of recent evidence. Eur J Pediatr 2003;162:72–80.
46. Estrada H, Gamboa Mdel M, Arias ML, Chaves C. Evaluation of the antimicrobial action of honey against *Staphylococcus aureus, Staphylococcus epidermidis, Pseudomonas aeruginosa, Escherichia coli, Salmonella enteritidis, Listeria monocytogenes* and *Aspergillus niger*. Evaluation of its microbiological charge. Arch Latinoam Nutr 2005;55:167–171.
47. Al-Waili NS, Akmal M, Al-Waili FS, et al. The antimicrobial potential of honey from United Arab Emirates on some microbial isolates. Med Sci Monit 2005;11:BR433–BR438.
48. Furnham A, Forey J. The attitudes, behaviors, and beliefs of patients of conventional versus complementary (alternative) medicine. J Clin Psychol 1994;50:458–469.
49. Barnes PM, Powell-Griner E, McFann K, Nahin RL. Complementary & alternative medicine use among adults: United States, 2002. Advanced Data 2004:1–19.

Address reprint requests to:
Ansam F. Sawalha, Ph.D.
Poison Control and Drug Information Center (PCDIC)
An-Najah National University
Nablus
Palestine

E-mail: ansam@najah.edu