INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

UMI

A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor MI 48106-1346 USA
313/761-4700 800/521-0600

**An investigation of the health beliefs and motivations of
complementary medicine clients**

by

Fuschia M. Sirois

**A thesis submitted to
the faculty of Graduate Studies and Research
in partial fulfilment of the requirements for the degree of**

Master of Arts

Department of Psychology

Carleton University

Ottawa, Ontario

May, 1998

**National Library
of Canada**

**Acquisitions and
Bibliographic Services**

**395 Wellington Street
Ottawa ON K1A 0N4
Canada**

**Bibliothèque nationale
du Canada**

**Acquisitions et
services bibliographiques**

**395, rue Wellington
Ottawa ON K1A 0N4
Canada**

Your file Votre référence

Our file Notre référence

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-32380-3

The undersigned recommend to
the Faculty of Graduate Studies and Research
acceptance of the thesis

An investigation of the health beliefs and motivations of
complementary medicine clients

submitted by Fuschia M. Sirois
in partial fulfilment of the requirements for
the degree of Master of Arts

.....
Thesis Supervisor

.....
Chair, Department of Psychology

Carleton University

May, 1998

Abstract

The reasons for choosing complementary medicine were explored by assessing the health awareness, satisfaction with doctors, and beliefs in self control and powerful others control over health, in a sample of health care clients (n = 199). Additional measures of attitudes towards complementary medicine use, personality variables, and recent medical history were also taken. Three client groups were compared: orthodox medicine clients (OM; n = 58), new complementary medicine clients (NCM; n = 70), and established complementary medicine clients (ECM; n = 71). Complementary medicine clients as a whole and the NCM clients alone were more health aware, and more dissatisfied with doctors than the OM clients, suggesting that these variables are involved in the choice to use CM. NCM clients were also more open to new experiences than OM clients. ECM clients were more health aware than NCM clients, suggesting that greater use of CM increases health consciousness. None of the groups differed on internal or powerful others health locus of control. Reasons for discrepancies from other studies and future areas for research are discussed.

Acknowledgements

I would like to thank my advisor, Mary Gick, Ph. D., for her guidance, inspiration and support throughout the different stages of this thesis. What had started as a seminar project filled with interesting speculations is now a tested piece of research. Thanks also to my husband, Mike, for his patience, involvement and unconditional support. The almost weekly trips to the doctors' offices, and the impromptu ventures to the library are not forgotten.

Table of Contents

	<u>page</u>
Introduction	1
Complementary therapies	2
Control beliefs and health	3
Patient satisfaction	4
Push versus pull model of CM use	5
Health belief change	6
Other reasons for CM use	7
Personality	7
Illness profile	8
Current research on CM use	9
Important research areas	14
Objectives	16
Method	18
Procedure	18
Participants	20
Materials	21
Health locus of control	21
Satisfaction with doctors	22
Health awareness	24

Negative affect	25
Five factor model of personality	26
Attitudes towards the use of CM	27
Reasons for using CM	27
Use of complementary therapies/medicine	28
Medical history	29
Demographic information	29
Design and analysis	29
Results	32
Preliminary analyses	32
Demographics	33
Main analyses	37
Dependent variables	37
Other comments about CM	39
Personality variables	40
Attitudes towards CM use	42
Reasons for using CM	44
Types of CM used	44
Medical history	45
Discussion	51
Motivations to use CM	51

Health awareness	51
Dissatisfaction with doctors	51
Negative affect	53
Locus of control	53
Personality	56
Impact of CM on health beliefs	58
Exploratory findings	59
Other reasons for CM use	59
Intentions to use CM	61
Characteristics of CM clients	62
Summary	64
Limitations of study	65
Future research directions	67
References	70

List of Tables

	<u>page</u>
Table 1	33
Table 2	36
Table 3	38
Table 4	41
Table 5	43
Table 6	48
Table 7	49
Table 8	50

An investigation of the health beliefs and motivations of complementary medicine clients

When an individual experiences physically distressing symptoms from an illness, a choice may be made to seek help. Treatment is usually sought from an acceptable and established source, such as a practitioner of orthodox medicine (OM). However, a growing interest and acceptance of alternatives to conventional medicine means that many people will choose treatment methods other than orthodox medicine. A recent U.S. survey estimates that about one in three people has used some form of alternative medicine at least once, and of those that have, about a third have made frequent visits (Eisenberg, et al., 1993). A Canadian study of physician's opinions about alternative medicine revealed that sixty-five percent perceived a demand for alternative medicine from their clients (Verhoef & Sutherland, 1995).

Originally referred to as unconventional or alternative medicine, this broad spectrum of therapies has been more appropriately called complementary medicine (CM) since it more often supplements rather than replaces OM (Downer et al., 1994; Murray & Shepherd, 1993; Thomas, Carr, Westlake, & Williams, 1991). Although this implies that CM therapies are used in conjunction with OM, results of the U.S. survey suggest that nearly 90% of people who choose CM do so of their own choice and without referral from their medical doctors (Eisenberg, et al., 1993).

Despite the growing interest in complementary medicine, the reasons for its increased use are not well understood. If seeking OM treatments for dealing with a

health problem is viewed as the customary choice, then what motivates an individual to want to try CM treatments instead? Are they pushed away from or dissatisfied with OM treatment or are they just attracted to CM because it matches their health belief system better, or both (Furnham & Beard, 1995)? Furthermore, once an individual becomes a regular CM client, what are the effects of CM on the individual's health belief system? Determining what factors and health beliefs might motivate someone to try CM treatments is important because it could alert OM practitioners to gaps within their approach to health care that might be remedied by gaining a better understanding of these patients' needs.

Complementary therapies

Complementary therapies are difficult to define because they encompass a broad range of practices and philosophical approaches to health care. They are often seen as not conforming to the standards of the conventional medical community, and may not be available through regular hospitals (Eisenberg et al., 1993). Some of the more frequently used CM practices include chiropractic, homeopathy, massage therapy, and acupuncture (Eisenberg et al., 1993; Furnham & Forey, 1994). Other less widely used CM therapies include, naturopathy, herbalism, the Feldenkrais Method, macrobiotics, reflexology, iridology, and reiki (Furnham & Forey, 1994). One element that all of these diverse practices have in common is that they emphasize that the treatment of illness should consider the whole person rather than just the specific health problem. They also encourage preventive health practices such as

reducing stress, good nutrition and special dietary changes, such as reducing red meat intake and avoiding food preservatives, and emphasize the relevance of lifestyle factors in maintaining health (Furnham & Bhagrath, 1993). As a result consultation times tend to be longer and more in depth than those of OM practitioners. Murray and Sheppard (1993) found that the extra time and attention spent by the alternative therapists was the most valued aspect of receiving alternative treatment. Thus, the differences between CM and OM health philosophy and consultation style suggest that CM may be viewed as placing a greater focus on the individual's awareness of and control over their health.

Control beliefs and health

A belief in personal control over health is often seen as being synonymous with having an internal health locus of control. Based on Rotter's model (Rotter, 1966) of how people explain the cause of an event, the health locus of control construct includes attributing one's health results to either internal or external efforts. An internal health locus of control would indicate that the person believes that their state of health relies primarily on their own efforts towards staying healthy. Consequently, someone who has an internal health locus of control may find the emphasis on personal involvement inherent within CM to be more in accordance with their health beliefs than the OM approach to treatment. Individuals who have an internal health locus of control have been found to be more assertive (Williams & Stout, 1985), and more likely to engage in preventative health care, especially if they valued health

(Wallston, Wallston, & Maides, 1976). Thus, they may be more likely to make choices about the type of health treatment they receive, and thus choose CM if they are not satisfied with OM.

Individuals who believe less in self control over health, and more in the authority of others can be described as having a belief that powerful others have control over health. This external locus of control dimension is associated with poorer performance on self-initiated health regimens (Harkapaa, et al. 1991) and a more passive approach to health problems (Brosschot, Gebhardt, & Godaert, 1994). If individuals who seek complementary medicine do so out of a greater desire to maintain a sense of perceived control over health, then perhaps individuals who rely more on the direction of authorities such as medical doctors are less likely to try complementary medicine.

Patient satisfaction

Patient satisfaction with their health care is the degree to which the client is satisfied both with the services provided and with the provider's conduct. The client's expectations about the health care they will receive can be a strong predictor of their satisfaction with their health care (Hsieh & Kagle, 1991). If the expectations are fulfilled, the client will be more apt to express satisfaction than if they are not. Furthermore, the match between the client's expectation and the physician's behaviour is an important factor in whether the client will be satisfied. In a factor analysis of patients' ratings of the importance of different aspects of health care, items relating

to the physicians conduct had the highest loadings (Hsieh & Kagle, 1991).

Furthermore, this factor accounted for 20.7 percent of the variance in the patient satisfaction scores, and was the best predictor of satisfaction with their medical care, excluding satisfaction with health care cost.

If the client expects the health care provider to behave in an egalitarian style, allowing client participation in treatment decisions, and the provider instead behaves in an authoritarian way, making all the decisions, the client will be dissatisfied with treatment (Ditto, Moore, Hilton, & Kalish, 1995). This poor response may be due to the fact that these clients perceive that their control in their own health care has been restricted. Interestingly, health care satisfaction may be independent of the client's perceptions of the provider's competence (Ditto, et al., 1995), suggesting that the perceived efficacy of the health care is not part of the client's set of expectations that determine satisfaction. A study of cancer patients using CM along with OM found that although most of the patients initially expected the CM to significantly affect their disease, they were still satisfied with the CM treatments when these effects did not occur (Downer et al., 1994). This emphasizes the importance of satisfaction with health care, rather than just health care effectiveness, in the type of health care chosen.

Push versus pull model of CM use

The choice to try CM treatments can be conceptualized as resulting from a push away from OM due to dissatisfaction, or as a pull towards CM because of a

perceived better match of their health beliefs and this type of health care (Furnham & Beard, 1995). Clients of OM may be dissatisfied due to discrepancies between the amount of control and type of interaction they expect from health care providers and what they receive from OM practitioners. They may have also learned about CM through the testimonials of friends and the media that portrayed CM as a health care approach that emphasized personal control over health (Furnham & Beard, 1995). Consequently, the same health beliefs that may make a client dissatisfied with OM may also attract them to CM. Thus, the motivation to choose CM treatments can be viewed as possibly the product of both being pushed from OM and being pulled to CM.

Health belief change

In investigating the motivations to choose complementary medicine, Furnham and Beard (1995) have raised the question of whether different health beliefs lead to different choices in health care, or whether different practitioners educate their clients with a different set of health beliefs? If we consider that people who try CM may have different health beliefs than those of exclusive OM users, then it is possible that these beliefs are strengthened as a result of the experience of CM. According to the cognitive-behavioral model, there is a reciprocal relationship between beliefs and behaviour (Craighead, Craighead, Kazden, & Mahoney, 1994). An individual's beliefs and evaluations of an event or concept in the environment influence their behaviour towards the environment, and their experiences with the environment in turn help to

shape future attitudes towards similar events. Ultimately, the beliefs are strengthened and validated by any experiences that are consistent with them. Thus, the experience of CM treatments and their inherent emphasis on health awareness and personal control would reinforce the health beliefs which may have initially led CM clients to try complementary medicine.

Other reasons for CM use

Personality. Although health beliefs may play an important role in the decision to use complementary medicine, other factors may also impact on this decision. It has been suggested that clients with a certain personality type may be more inclined to seek out alternative medical care (Verhoef, Lloyd, Sutherland, & Brkich, 1990). However, the association between personality and complementary medicine use has not been formally investigated. The five factor model of personality (Costa & McCrae, 1985), one of the more common models used for assessing the relationship between personality and health behaviours, would provide a good framework for such an investigation. It features the five personality dimensions of neuroticism, extraversion, openness, agreeableness and conscientiousness, that have demonstrated associations with different types of health behaviours and tendencies. Conscientiousness, a tendency to be organized, goal-oriented and reliable, and agreeableness, a tendency to be tolerant and accepting, were found to be predictors of both healthy attitudes and health behaviours (Lemos-Giraldez & Fidalgo-Aliste, 1997). Neuroticism, which is a proneness to strong negative emotions and a

vulnerability to stress, is associated with the absence of positive health behaviours (Vingerhoets, Croom, Jeninga, & Meges, 1990), and excessive physical complaints (Smith & Williams, 1992) whereas extraversion, a tendency towards experiencing positive emotions and high activity, has been linked to positive health behaviours such as exercise compliance (Mechanic & Cleary, 1980). Openness, a liking for new experiences and liberal thinking, has been linked to substance related risk taking (Booth-Kewley & Vickers, 1994). However, a review of recent research suggests that this personality domain has been substantially neglected in health psychology research (Marshall, et al. 1994).

Illness profile. Furnham and Bhagrath (1993) have suggested that it may be an individual's health complaint as much as their health related beliefs that determines their choice of treatment. Generally, individuals who use complementary medicine tend to use it to treat illnesses that are chronic (Vincent & Furnham, 1996) non-serious and non-life threatening (Eisenberg, et al. 1993; Furnham & Forey, 1994) and functional rather than organic (Verhoef, Sutherland, & Brkich, 1990). For more life threatening or serious health problems (i.e. cancer, diabetes, lung problems, high blood pressure, and angina) even those who regularly use complementary medicine tend to choose orthodox medicine first (Eisenberg, et al. 1993; Furnham & Forey, 1994). Assessing an individual's illness profile is therefore an important part of understanding their motivations to use complementary medicine.

Current research on CM use

Although there is an increased interest in complementary medicine, there have been relatively few studies examining the motives of CM clients and contrasting them with those of exclusive OM clients. However, the initial findings from these investigations suggest that the key differences between CM and OM clients lie within their health beliefs systems. Furnham and Beard (1995) found that health related beliefs discriminate between CM and OM clients more clearly than do general belief systems. A comparison of Just World Beliefs and coping style preferences in these two groups revealed no significant differences, while they differed on several health beliefs including the importance of psychological and emotional well being to health. Since they also found that OM clients were more likely to be female, younger and have a higher occupational status, these demographic variables were co-varied out in the analysis.

The reasons for using or not using complementary medicine may also be related to specific concerns regarding its cost and effectiveness. Although satisfaction with the cost of health care is a major predictor of overall satisfaction with treatment (Hsieh & Kagle, 1991), Murray and Sheppard (1993) found that the additional costs often associated with complementary medicine treatments were not a disincentive to use CM. Other investigations have shown that recommendation by a friend or relative of the benefits of complementary medicine are an important incentive for trying CM (Furnham & Beard, 1995; Vincent & Furnham, 1996).

One of the more frequent findings from these studies is that CM clients were more dissatisfied with OM than the OM clients. In most of the studies CM patients indicated that they were less satisfied with their last visit to an OM practitioner, felt their doctors were less concerned for their well being, and listened to them less (Furnham & Smith, 1988; Furnham & Bhagrath, 1993; Furnham & Kirkcaldy, 1996). They also felt that orthodox medicine had unpleasant side effects, was not effective for their health problem, and had difficulty communicating with their medical doctors (Vincent & Furnham, 1996) Similarly, a Canadian study of patients attending a gastroenterology clinic found that fewer users of alternative medicine were satisfied with conventional medicine, and more CM users were sceptical of orthodox medicine than OM clients (Verhoef, Sutherland, & Brkich, 1990).

Furnham and Forey (1994) did not confirm these results, finding instead that there was no apparent difference in the overall satisfaction levels of CM and OM clients. However, methodological problems may be behind this discrepancy. While each study included about the same number of participants per group, the Furnham & Forey (1994) findings did not use adequate controls for demographic differences between the groups. Although differences in age, gender and socio-economic status were reported, these variables were not statistically covaried out between the groups, whereas the other studies did control for these differences. This increase in between group variability likely decreased the power of the study to detect any differences in satisfaction between CM and OM patients and may have led to the conflicting results.

Thus, if the findings from the majority of the studies are accepted, there appears to be support for the push model of why CM clients are motivated to try CM.

Differences in health locus of control beliefs have also been investigated. As expected, CM clients differed from OM clients on this health belief, with CM clients having a greater belief in self control over health (Furnham & Bhagrath, 1993). However, two studies also found the reciprocal relationship, that OM clients had a greater belief in provider control over health (Furnham & Kirkcaldy, 1996; Furnham & Smith, 1988). Although this may appear to indirectly support the idea that CM clients believe less in provider control over health and hence, more in self control, items within the provider control subscale of the health locus of control scale used in these studies (Lau, 1982) may have biased these results. Since the word "doctor" is used in every item instead of a more neutral term such as "health care provider", it is unlikely that many of the CM patients would endorse these items. Rather than measuring the belief in health care provider over health, whether CM or OM, it appears that what was measured was a belief in OM provider control over health.

Several of the studies also uncovered differences in health consciousness and health awareness that may or may not contribute to the decision to use CM. Clients of CM had a greater awareness of preventive health practices such as reducing stress, having a good diet, and getting proper sleep, than did OM clients (Furnham & Kirkcaldy, 1996). They were also more health conscious than the OM clients, reporting that they excluded additives and preservatives from their food, monitored

the nutritional value of their food, and shopped in health food shops more than OM clients (Furnham & Forey, 1994; Furnham & Bhagrath, 1993; Furnham & Kirkcaldy, 1996). However, it is not clear whether this greater awareness of health led them to choose CM because it emphasizes such preventative measures, or is a result of their experiences with CM which focus on personal involvement in health. The criterion for selecting CM group subjects in each of these studies was based only on whether they were currently using CM, but no discrimination was made between clients who had been using CM for a long period of time and those who were new CM clients. Thus, if the clients in the CM group had a longer experience with CM, it would be reasonable to expect that they might also have a higher health consciousness than OM clients.

These findings along with those showing a tendency for CM clients to believe more in self control over health, suggest that patients are pulled towards CM because it matches their health control beliefs and health awareness levels, in addition to allowing them to maintain and strengthen these beliefs. Since only two of these studies has actually shown evidence for both the push and pull sides of client motivation to use CM (Furnham & Kirkcaldy, 1996; Vincent & Furnham, 1996), it is difficult to draw conclusions about whether both dissatisfaction with OM and attraction to CM are together involved in the choice to use CM.

Another dimension that CM clients tend to score higher on is psychiatric morbidity. Results from two studies suggest that CM clients were more distressed than OM clients (Furnham & Smith, 1988; Furnham & Bhagrath, 1993), as measured

by the Langner-22 scale of distress (Langner, 1962). The reasons for this higher level of distress may be that some people who choose CM do so as a last resort when OM treatments have failed, and are therefore more distressed. However, the CM and OM groups in these studies did not differ significantly in terms of the severity of presenting health problems, and there were no included cases of life threatening health problems. Furthermore, Furnham & Beard (1995) failed to find any differences between the mental health of CM and OM clients when they used a different measure. This suggests that the differences detected with the Langner distress scale may be due to items that relate to somatic complaints that can be interpreted as neuroses. However, the majority of CM users tend to have chronic health complaints such as arthritis, gastrointestinal problems, and back problems (Eisenberg et al., 1993), as well as other functional disorders which are not easily treated by OM (Furnham & Smith, 1988). Therefore, any items that ask about being troubled by aches and pains or being worried about one's health may be more frequently endorsed by CM clients.

Overall, demographic variables were well controlled for in these studies, sample sizes were good ($n = 80$ to 100 per group), and the illness profiles were contrasted and found comparable for both the CM and OM groups. However, most of these investigations involve a common researcher, and use similar self report measures, two factors that may decrease the objectivity of the results. Although these studies represent pioneering investigations into the differences between CM and OM

clients, more research is needed to clarify the motivational factors involved in the decision to use CM for the treatment of health problems.

Important Research Areas

One shortcoming of the findings previously outlined is that all but one of the studies involved British population samples of CM and OM clients from a general medicine population. Only Furnham and Kirkcaldy (1996) attempted to cross-culturally replicate the findings of the previous studies, but did so with a German population sample. Therefore, it is difficult to know whether these results would replicate with a Canadian population, since CM has been enthusiastically embraced as an acceptable way of dealing with health problems in both the U.K. and Germany (Furnham & Kirkcaldy, 1996). Furthermore, the one Canadian study of CM use involved a very specific medical population, those with gastroenterological problems (Verhoef et al., 1990). The findings from that investigation may not generalize to a broader population with more diverse medical concerns. A replication of these findings with a Canadian sample from a general medicine population would verify if in fact the health belief differences suggested by the European studies and the lone Canadian study are generalizable to other populations.

Although there has been support for the idea of dissatisfaction pushing people to choose CM, there is also equal support for the concept of people choosing CM because of an attraction or pull towards its perceived efficacy and support for beliefs in personal health control. Further clarification of the presence of differences in one or

all of the health beliefs hypothesized to influence the choice of CM is needed. If a belief in self control over health is a central issue in the push-pull model that may influence both satisfaction with OM and the perceived attractiveness of CM, then it would be expected that there would be significant differences in health locus of control beliefs and OM satisfaction levels between the CM and OM clients. In order to show that these factors are involved in the decision to use CM, these differences would be present at or just after the choice to use CM is made. A comparison of the health beliefs of OM clients with new CM clients might elucidate the differences in health beliefs that motivate someone to try CM treatments.

Finally, the results from the previous studies consistently suggest differences in the health awareness of CM clients as compared to OM clients. Although those who use CM may show higher health awareness than OM users, the direction of causality is not indicated. The cognitive-behavioral model would suggest reciprocal causation, with those who have more health awareness being drawn to CM which reinforces these beliefs. It would also imply that while this may be true, this health awareness will be strengthened as CM clients are educated by their CM practitioners to be more aware of preventative health measures. Since all of the studies that reported a difference in health awareness between CM and OM clients did not discriminate between new CM clients and established or long-time CM clients, it is difficult to tell whether the difference in health awareness was a product or a precursor of using CM. The same questions arise in part for the belief in self control

over health. Further investigation into the differences between new and established CM clients on these health belief dimensions would clarify both the motivations of CM clients and the effects of CM upon their health belief systems.

Objectives

This study involved verifying some of the previously reported differences in the health beliefs of complementary medicine and orthodox medicine clients in an attempt to better understand the motivations that underlie the choice to use CM. Moreover, this research examined Canadian populations of CM and OM clients, and distinguished between CM clients with less experience with CM (new CM clients) or more experience with CM (established CM clients). An examination of the effects of CM on the health beliefs of its clients will help to clarify the issue of causality between health beliefs and the use of CM. Other areas that may impact on the choice to use CM were also explored, including personality dimensions, intentions to use CM, and medical history.

The first part of the study was a Canadian replication of the previous European studies. It involved a comparison of the health beliefs of CM clients with OM clients so that the factors involved in the choice of consulting a CM practitioner can be better understood. In general, it was expected that the results will follow those found in the European studies. First, it is expected that clients of CM will be more dissatisfied than OM clients with OM treatment. Secondly, CM clients will have a greater belief in their own personal control over health, less of a belief in provider control over health,

and a greater health awareness, as compared to the clients of OM. In addition, new CM users were specifically compared to OM users in order to determine that the hypothesized differences in beliefs and satisfaction are present at the start of CM use (or shortly thereafter), rather than developed over time or with increased use of CM. This will help clarify whether CM users are both pushed, by dissatisfaction with OM, and pulled, by a better match in health beliefs, to make the choice to use CM. Finally, the impact of personality variables on the choice to use CM were explored by examining differences between new CM clients and OM clients.

For the second part of the study the beliefs of new CM clients and established CM clients were compared in order to investigate the possible influence of experience with CM treatments on the health belief system. It is hypothesized that the established CM clients will show significantly higher levels of health awareness as compared to the new CM clients, due to their experience with CM over time. As well, the more established CM clients are expected to have a greater belief in personal control over health than the new CM clients, also due to experiences with CM practices that reinforce self control over health.

The final part of this investigation represents an exploration into other possible reasons for CM use, the intentions for future CM use, the types of CM most used, medical history and treatment profiles, and the general characteristics of CM clients in Canada.

Method

Procedure

Participants were recruited by distributing questionnaires at 13 orthodox medicine health offices/clinics and 4 complementary medicine health offices/clinics in the Ottawa area, each staffed by one or more general medicine practitioners or CM practitioners. The CM offices included a massage therapy clinic, a chiropractic doctor's office, a naturopathic/homeopathic clinic, and a chiropractic office which also offered acupuncture and massage. Of the 29 offices approached to participate in the study 11 (37.9%) refused for various reasons including lack of display space, office policies, and no interest in the study. All offices had a separate waiting room for clients which was staffed by a receptionist.

The questionnaires were made available to potential participants through a display set up in these health offices. A display sign advertising a "health services study" invited clients who were interested in participating to fill out the brief 15 minute questionnaire and deposit it in a sealed envelope in a box marked confidential in the office. Those interested in participating in the study were requested to sign the statement of informed consent, complete the questionnaire in full and deposit the questionnaire in the deposit box at the time of their visit. They were assured through a briefing letter that their decision to participate in the study would not in any way affect the treatment they were receiving and that all information would remain anonymous and confidential (Appendix A). A short letter was included at the end of

the questionnaire to remind the participants of the procedure for completing and depositing their questionnaires, which included taking the thank-you envelope containing the debriefing letter for the study.

In order to insure that the questionnaires were not filled out outside of the office, the receptionists at the health offices were instructed to inform potential participants that the questionnaire must be completed at the office. After the study was completed, all of the receptionists confirmed that they had instructed the participants that the questionnaire had to be completed in the office, and that if they had not finished filling it out before their health appointment that they could complete it afterwards in the office. Compliance with the receptionists' instructions was very good, as only 3 of the questionnaires completed were not returned via the drop boxes. Two were mailed to the researchers at the participants' expense, and one was hand delivered to the researcher's office.

A total of 396 questionnaires were distributed to the 17 health offices in Ottawa between the months of November 1997 and March 1998. Seventy-three of these questionnaires were not completed and were picked up at the close of the study. Of those questionnaires that were made available, 204 (51.5%) were completed and returned. However, not all of these questionnaires may have been examined by the health office clients, and thus this number may not be a true reflection of the response rate. Excluding the seventy-three returned/not completed questionnaires, the percent of clients who definitely picked up the questionnaire and completed it was 63.2. The

response rates were comparable for both the OM offices and the CM offices, with individual office rates ranging from 24 to 85% of the questionnaires made available being completed and returned. However, 71% of all completed questionnaires were obtained through OM offices compared to only 29% from the CM offices.

Participants

A total of 204 completed questionnaires were returned. However, 4 of these were not included in the study due to substantial portions of the questionnaire being incomplete. One other participant was excluded from the study because she was 17 and therefore under the age of legal consent. The remaining 199 participants were included in the study. The participants ranged in age from 19 to 80, and their average age was 42 (SD= 13). They included 155 females, 43 males, and 1 transsexual. Sixty-one percent were married or living with a spouse equivalent, 19% had never married, 18% were divorced or separated, and 2% were widowed. Seventy-two percent were employed (either full or part-time), 18% were unemployed (including retired), and 10% were on sickness or disability leave from work. Fifty percent of the participants had a university or college education (excluding postgraduate education), 38% had some postgraduate education, and 12% had high school or less education. The majority of the sample was Caucasian (93.4%).

Based on their use of different health services, the participants were classified into one of three groups, either orthodox medicine users (OM), new or infrequent complementary medicine users (NCM), or established complementary medicine users

(ECM). The original classification scheme for this study (see Appendix C) was changed since preliminary results indicated that the inclusion criteria for the NCM group was too stringent, and would probably not be met by very many participants. Therefore, this group was broadened to include individuals who had been using CM for less than one year, one to two years or three to five years of infrequent CM use, or use of only one type of complementary therapy at any frequency for under five years. The OM group included individuals who had not used CM regularly in the past or in the last year, but may have tried a complementary therapy previously. Participants who had been using CM for over 5 years, or had used more than one complementary therapy for three to five years at a high frequency, met criteria for the ECM group. The three groups for this study consisted of 58 OM clients, 70 NCM clients, and 71 ECM clients.

Materials

Each participant completed a 6 page questionnaire (Appendix B) that measured the main dependent variables of health locus of control (internal and powerful others), satisfaction with orthodox medicine doctors, and health awareness. In addition, demographic characteristics, personality dimensions, brief medical history, use of complementary therapy and attitudes towards the use of complementary medicine were assessed and compared across the groups.

Health locus of control. The Multidimensional Health Locus of Control Scale (MHLC) Form A (Wallston, Wallston, & Devellis, 1978) was chosen as the assessment instrument for this study, mainly because its wording was less biased than other instruments of this construct . For instance, the Health locus of control scale

(Lau, 1982) which has been used in previous research of attitudes of CM patients, contains numerous items with "doctors" and references to medical care. Since this study is examining participants that receive health care from professionals other than those trained in orthodox medicine, the references to solely medical personnel would likely be biased towards the participants in the OM group and thus confound any measure of locus of control. Therefore, MHLC was chosen and the few items that contained the word "doctor" were reworded to "health professional" for the purpose of this study. As well, for those items that used this term, participants were instructed to circle either MD, for medical doctor, or CP, for complementary practitioner, to indicate to which health professional their answer referred to.

This 18 item self report measure contains 3 subscales that measure the degree to which an individual believes in self-control over health (internal health locus of control, IHLC), powerful others control over health (powerful others external locus of control, PHLC), and chance health outcomes (chance health locus of control, CHLC). Items such as "I am in control of my health" from the internal health locus of control scale, are scored on a six-point Likert type scale ranging from strongly disagree (1) to strongly agree (6). The subscales have Cronbach alpha values ranging from .61 to .80 (IHLC), .55 - .83 (CHLC), and .56 - .75 (PHLC) (Wallston, Wallston, & Devellis, 1978).

Satisfaction with doctors. In order to address the issue of whether individuals choose CM because of dissatisfaction with medical doctors, the Doctor Satisfaction

Questionnaire (DSQ) was developed for this study. This original measure is based on previous research into patient satisfaction with their doctor's conduct and performance. This research suggests that patients' expectations about the care they will receive are the best predictors of satisfaction with that care (Hsieh & Kagle, 1991). It contains seven questions about the perceived competence and conduct of medical doctors and deals with dimensions of health care that are generally expected to be fulfilled by doctors (Hsieh & Kagle, 1991). Four of these items are similar to items used to measure the perceived competence of doctors in a study of CM client attitudes (Furnham & Forey, 1994). The first item assesses a general belief in the effectiveness of orthodox doctors in helping their patients feel better. The remaining six items address satisfaction with the conduct of the family or regular doctor. Three of the items deal with communication issues, including listening to the patient's concerns and taking the time to explain health problems and treatment thoroughly. One item deals with the perceived effectiveness of their doctor's treatment, and another addresses whether they feel their doctor is concerned with their well being. A final item is included as a rating of global satisfaction with their doctor's medical care. Respondents are asked to indicate how often they feel each of the statements concerning medical doctors is true by scoring on a four-point scale ranging from 1 for "almost never", to 4 for "almost always", with higher scores on the DSQ indicating greater satisfaction with medical doctors. Reliability analysis of the DSQ revealed good internal consistency ($\alpha = .90$, $n=199$).

A final open-ended question appearing at the end of the DSQ invited participants to make any other comments they may have regarding their experiences with medical doctors. Although this was not included in the total DSQ score, the responses were explored to assess other concerns the participants had regarding treatment by medical doctors.

Health awareness. The Health Awareness Questionnaire (HAQ) was developed for this study in order to assess the health consciousness and awareness of the participants. It was adapted from the Health Consciousness and General Awareness measure (Furnham & Forey, 1994) which contained 14 items that related to environmental awareness as well as health awareness. Since this research is mainly concerned with health consciousness and not environmental awareness, only items relating to health awareness were included in the HAQ from the Furnham and Forey measure. The HAQ contains questions about the extent to which people engage in activities that reflect health awareness, and are rated on a scale from 1 for "not at all" to 5 "almost always". Six of the ten items in the HAQ were rephrased items from the Health Consciousness and General Awareness measure. The remaining four items were added to cover other health relevant dimensions such as exercise, consumption of caffeine, use of alcohol and recreational drug use.

However, preliminary reliability analysis revealed a low alpha value of .67 (n=179) and problems with three of the ten items, which when deleted increased the scale's reliability to .72. The item concerning the use of recreational drugs showed

very low variance ($M = 4.83$, $SD = .56$) and was excluded from the final measure. In addition, the item pertaining to avoiding use of prescription drugs may have been biased towards higher scores for CM users and lower scores for OM users, since CM generally advocates use of more natural therapies in place of prescription drug use. Furthermore, some participants in the study may have specific physical conditions that demand a pharmaceutical regimen for their management, and thus this item may not be an accurate reflection of the participant's attempts to be health conscious. For these reasons this item was also excluded from the analysis of the final measure. Finally, the item on alcohol consumption was removed from the HAQ, since recent studies and media reports have suggested that a certain amount of alcohol consumption a day may actually be health promoting. Although excessive consumption is generally not healthy, the possible ambiguous interpretation of this item may make it unsuitable to probe an individual's degree of health awareness.

The final 7 item revised HAQ shows adequate internal consistency ($\alpha = .73$, $n = 199$).

Negative affect. The Negative emotionality (NEM) scale (Tellegen, 1982). is a 14 item scale from Tellegen's Multidimensional Personality Questionnaire. It focuses specifically on negative affect without including items relating to somatic complaints or health. It has demonstrated good internal consistency ($\alpha = .82$, $n = 872$) (Watson & Pennebaker, 1989). Some literature suggests a relationship between NEM and excessive complaints made about anything. Since we wished to examine doctor

satisfaction without the potentially confounding effects of NEM a measure of this personality dimension was included. The use of Tellegen's NEM scale to measure distress, uncontaminated with somatic or health related items, has been recommended for more clearly assessing the presence of negative affect in populations with health problems (Watson & Pennebaker, 1989).

Five factor model of personality. A self rating measure of the five factor model of personality was used to explore the relationships between choice of health care and personality (Little, in press). This measure contains five items that assess the personality dimensions of neuroticism, extraversion, openness, agreeableness and conscientiousness. Neuroticism refers to the tendency to experience emotional distress; extraversion is the tendency to experience positive emotions, sociability and high activity; openness is a receptive orientation toward new experiences and ideas; agreeableness is the inclination toward interpersonal trust and consideration of others; and conscientiousness is the tendency towards industriousness, organization, and persistence (Costa & McCrae, 1985). Based on the NEO Personality Inventory (Costa & McCrae, 1985, 1989), this direct self rating measure of the five factor model assesses each of these personality domains on an 11 point scale from 0 to 10, with 0 indicating the most identification with a particular dimension, and 10 indicating the least identification with a domain. Although the psychometric properties of this measure have not been formally investigated, Burisch (1984) has argued that self ratings are more directly communicable, more economical, and also more valid than

their more lengthy questionnaire counterparts. He states that these more direct measures afford modest but consistent increases in validity than the corresponding questionnaire scales and has found over a dozen studies that support this stand.

Attitudes towards the use of complementary medicine. All participants were requested to endorse any one of 7 items regarding the possible use of complementary therapy, or add their own comments regarding use of CM for the eighth item. The question content was designed to probe possible intentions to use CM in the future, even if the respondent had never tried CM before. Included were an item showing non-interest to try CM, four items showing conditional intention to use CM, one item showing non-conditional intention to use CM, and a final item indicating no intention to use CM again. The conditional items implied that they would try a complementary therapy if there were no additional costs, if they were recommended to it by someone they trusted, if they had more information about it, or if it was more accessible. These items were included to assess the possible reasons why some individuals are not using CM at all or as often as they may like to.

Reasons for using CM. Participants who were currently using CM were asked to endorse any of 6 items regarding their reasons for using CM. These items were based on previous research done in Great Britain into why individuals turn to complementary medicine (Vincent & Furnham, 1996). A factor analysis of over 20 items from the British study revealed five distinct factors regarding reasons to use CM. Items with highest loadings were chosen from four of the five factors and

rephrased for this study in order to verify if these reasons would be as salient for a Canadian population sample as they were for the original British sample.

Additionally, five of these items can be viewed as measures of whether CM clients are pushed away from CM and towards OM (OM ineffective, OM had side effects, poor communication with OM doctor) or pulled towards CM (CM allows active health role, CM treats the whole person). One item "I am desperate to solve my health problem and will try anything" was included even though its loading was not particularly high. However, it was felt that this item may help identify those individuals who have longstanding physical problems, which may be their main reason for seeking CM treatment. Previous research has indicated that the longer the illness duration, the more likely patients were to use CM (Moser et al., 1996).

Use of complementary therapies/medicine. Participants were asked to indicate which of the complementary therapies listed they had tried (if any), and how many times they had used them in the last 3 months and in the last year. The therapies listed were chiropractic, homeopathy/naturopathy, acupuncture, and massage therapy, all of which have been shown to be among the most frequently used complementary therapies (Eisenberg, et al. 1993; Vincent & Furnham, 1996) Participants were asked how long they had been using CM (under 6 months, under 1 year, 1 to 2 years, 3 to five years, or over five years). This measure is for the purpose of categorizing clients into OM users, new CM users or established CM users, and for exploring possible differences in the types of complementary therapies that have been tried or used by

different health care clients. Additionally, the participants are asked whether they used CM in addition to or instead of orthodox medicine. Previous research in Great Britain has shown that complementary health care is used more as a supplement rather than a substitute for orthodox medicine (Thomas, Carr, Westlake, & Williams, 1991).

Medical history. Participants were requested to answer questions about the nature of any illnesses or physical problems which they were currently experiencing and/or seeking treatment for in the past year. A list of twelve illnesses/physical problems was presented as well as a blank item for other illnesses such as chronic fatigue, reproductive problems and environmental sensitivities. Participants were asked to indicate what type of treatment (OM or CT, both, or none) they are or have been using for each illness/physical problem. This measure was included to assess differences in both the number and type of health problems experienced across the different groups, in addition to exploring the relationship between type of illness and treatment used.

Demographic information. Participants reported general demographic information regarding age, gender, occupation, income, education level, ethnicity, and marital status.

Design and Data Analysis

Participants were divided into 3 groups, OM clients, new CM clients and established CM clients, based on the previously mentioned criteria. In the preliminary analysis the three groups were tested for differences in NEM and the demographic

variable of age using SPSS ANOVA, with the intention that any differences found would be entered as covariates in the main analysis. Since health related concerns and therefore health awareness may increase with age, this variable was chosen to be examined as a potential confounding variable. Screening for missing data, violations of the assumptions of multivariate analyses of variance (MANOVA), and multivariate outliers, was also conducted.

The main analysis involved a comparison of the three groups on the main dependent measures, which are the internal and the powerful others scales of the MHLC, OM doctor satisfaction (DSQ), and health awareness (HAQ). A set of non-orthogonal a priori comparisons of the various groups on the dependent variables was performed within SPSS MANOVA. For the first part of the analysis the two CM groups were pooled and compared against OM users. The results of this test will show whether previous results replicate to a Canadian population. Then, a comparison of just the new CM users versus the OM users was conducted on the dependent variables to investigate the impact of these variables on the decision to use CM. Finally, new CM users were compared to established CM users on health awareness (HAQ), and internal control (MHLC) in order to examine if these beliefs changed with more frequent and longer CM use.

The five main personality variables were explored using one-way analyses of variance (ANOVA) and specific a priori contrasts of the OM group with the new CM group in order to examine if the choice to use CM is motivated by a particular

dispositional factor. Additional analyses on the use of CM, attitudes about CM, reasons for use of CM, and medical history were performed using chi-square analyses and one-way analyses of variance (ANOVA).

Results

Preliminary Analyses

Prior to analysis, the data were screened for missing values among the main dependent variables. Where values were randomly missing, the group mean was inserted. This procedure is preferable as it is not as conservative as using the overall mean for a given variable, but not as liberal as using prior knowledge (Tabachnick & Fidell, 1989). There was no detectable pattern within the missing data, suggesting that items were accidentally left blank rather than because of their content.

In order to verify the inclusion of infrequent CM users in the NCM group, participants meeting the new NCM criteria were divided into three subgroups: those who had used CM for less than 1 year ($n=25$), use of CM for 1 to 2 years ($n=24$), and 3 to 5 years infrequent use of CM ($n=21$). Possible differences between the groups on the four main dependent variables were assessed using SPSS MANOVA, using Pillais' criterion in order to control for unequal sample sizes (Tabachnick & Fidell, 1989). The three groups did not significantly differ on the set of dependent variables (internal health locus of control, powerful others health locus of control, health awareness, and doctor satisfaction) multivariate $F(2, 67) = 1.07, p < .39$. Thus, the new NCM group criteria were supported, and all three NCM subgroups were treated as one group (new and infrequent CM users) in the final analyses.

Multivariate outliers among the DVs for each of the three groups (OM, NCM, ECM) were screened using Mahalanobis' distance in SPSS regression. No within cell

outliers were found at $\alpha = .001$. Prior to conducting the MANOVA main analyses, assumptions of normality and homogeneity of variance-covariance matrices were also evaluated. All were found to be satisfactory. Pillais' criterion was adopted for all MANOVA's in order to control for unequal sample sizes.

Data were then screened for potential covariates. A one way analysis of variance of age revealed no significant differences among the three groups, $F(2, 196) = 1.32, p < .27$ (see Table 1), and therefore age was not entered as a covariate in the MANOVA main analyses. A one-way ANOVA was also conducted on negative emotionality (NEM) in order to determine if there were any potentially confounding group differences. All three groups reported comparable scores on the NEM, $F(2, 196) = 0.28, p < .76$, and thus this variable was not used as a covariate in the main analyses.

Table 1

Age of participants as a function of client type

<u>Client type</u>	<u>M</u>	<u>SD</u>	<u>n</u>
OM	41.00	14.43	58
new CM	40.64	12.41	70
established CM	43.84	12.60	71

Demographics. An analysis of gender distribution between the groups was also not significant, indicating that the proportions of male to female participants

were similar for each of the three groups of health care users, $\chi^2(2, N = 198) = 0.09$ $p < .95$ (Table 2). For this analysis, the single transsexual participant was excluded since inclusion of this category would produce cells with a count less than 5 and make a chi-square analysis invalid. Three groups were also similar in their ethnic/racial background, with the majority of participants identifying themselves as either Caucasian or Canadian (93.4%). Only a small proportion indicated that they were Jewish (3.0%), from other racial backgrounds including Aboriginal, Latin American, and Middle Eastern (3.0%), or Black (0.5%).

Four demographic variables (i.e., marital status, education level, employment status, and income) were recoded into variables with fewer categories in order to simplify and/or make analyses possible. For marital status, married and live with spouse equivalent were combined into "not single", and never married, widowed, and divorced or separated became the new category "single". The new marital status variable could also be interpreted as a rough measure of social support. Employment status was re-categorized into employed (including full and part time), with unemployed and sickness or disability leave remaining the same. Income which originally had seven categories of total household income was reduced to four levels: low income (under \$20,000 per year), low to middle income (\$21,000 to \$50,000 per year), middle to high income (\$51,000, to \$90,000 per year), and high income (over \$90,000 per year). The seven original categories of the education variable were also reduced to give three new education levels: up to and including high school

education, university education (excluding post graduate level), and post graduate education.

Although there were no subject differences among the groups on social support (marital status), $\chi^2(2, N=199) = 4.86, p < 0.09$, there was a trend that both new complementary medicine users (NCM) and established complementary medicine users (ECM) were more likely to be married than single (see Table 2).

Employment status did not differ significantly between the three groups, $\chi^2(4, N = 199) = 2.92, p > .05$, with the majority of participants being employed (72.4%) and only a small minority (10.1%) on sickness or disability leave from work (see Table 2). However, complementary medicine users did have significantly higher education levels than the orthodox medicine group, $\chi^2(4, N = 199) = 10.77, p < .05$. (see Table 2). For example, a greater proportion of OM clients (20.7%) than ECM clients (4.2%) had a high school education or less, and 45.1% ECM clients had a postgraduate education, whereas only 25.9 % of OM clients did so.

Significant differences in income level were also found between the three groups, $\chi^2(6, N = 196) = 15.52, p < .017$ (see Table 2). More OM clients had a low to middle income (42.1%), and fewer had middle to high incomes (17.5%), or high incomes (17.5%). In contrast, among the ECM clients more had middle to high incomes (44.9%) and fewer had low incomes (11.6%). Income levels were evenly distributed within the NCM group.

Table 2

Gender, marital status, employment, education and income levels as a function of client group.

	Client Group			χ^2	df	N	p
	OM	NCM	ECM				
	% (freq.)	% (freq.)	% (freq.)				
Gender				0.093	2	198	.955
Male	20.7 (12)	22.9 (16)	21.1 (15)				
Female	79.3 (46)	77.1 (54)	77.5 (55)				
Transexual	— —	— —	1.4 (1)				
Marital Status				4.86	2	199	.088
single	50.0 (29)	38.6 (27)	31.0 (22)				
not single	50.0 (29)	61.4 (43)	69.0 (49)				
Employment status				2.92	4	199	.571
employed	67.2 (39)	78.6 (55)	70.4 (50)				
unemployed	22.4 (13)	14.3 (10)	16.9 (12)				
disability leave	10.3 (6)	7.1 (5)	12.7 (9)				
Education				10.76	4	199	.029
High school	20.7 (12)	12.9 (9)	4.2 (3)				
University	53.4 (31)	47.1 (33)	50.7 (36)				
Post-graduate	25.9 (15)	40.0 (28)	45.1 (32)				
Income				15.51	6	196	.017
Low	22.8 (13)	17.1 (12)	11.6 (8)				
Low to middle	42.1 (24)	25.7 (18)	20.3 (14)				
Middle to high	17.5 (10)	34.3 (24)	44.9 (31)				
High	17.5 (10)	22.9 (16)	23.2 (16)				

OM - orthodox medicine client; NCM - new complementary medicine client

ECM - established complementary medicine client

Main analyses

Dependent variables. A multivariate analysis of variance was performed on four dependent variables: health awareness, satisfaction with doctors, internal health locus of control, and powerful other health locus of control. These were assessed as a function of client type (orthodox medicine, new complementary medicine, and established complementary medicine) using SPSS MANOVA with Pillais's criterion . This was followed by a set of planned comparisons in order to test the hypotheses regarding differences between complementary users in general (NCM and ECM groups pooled) and orthodox medicine users, and specific differences between individual groups. The alpha level was corrected for two non-orthogonal comparisons for doctor satisfaction ($\alpha = .03$), and three non-orthogonal comparisons for health awareness, and the two health locus of control variables ($\alpha = .02$).

The multivariate F was significant, $F(2,196) = 4.28, p < .000$, effect size .081 (see Table 3 for univariate F 's, effect sizes and power). The combined group of new and established complementary medicine users had significantly higher health awareness than the orthodox medicine clients, $t(196) = -4.58, p < .00001$ (see Table 3 for means and standard deviations). The CM clients were also more dissatisfied with medical doctors than the OM clients, $t(196) = 3.14, p < .002$. However, the CM clients and the OM clients did not differ in terms of internal health locus of control, $t(196) = -0.17, p < .86$, or powerful others health locus of control, $t(196) = 0.60, p < .54$.

Table 3

Mean scores and univariate analysis of variance results for the dependent variables as function of client group.

Client Group																				
DV	OM				NCM				ECM				NCM + ECM				F	p	eta square	power
	M	SD	n		M	SD	n		M	SD	n		M	SD	n					
Health awareness	2.95	0.7	58		3.32	0.69	70		3.58	0.71	71		3.44	0.71	141		13.05	0.000	0.117	0.98
Satisfaction with doctors	3.41	0.50	58		3.14	0.66	70		3.09	0.61	71		3.12	0.63	141		5.07	0.007	0.049	0.81
Internal HLOC	25.3	4.7	58		25.09	4.68	70		25.7	4.00	71		25.4	4.35	141		0.35	0.700	0.004	0.11
Powerful others HLOC	18.4	4	58		17.89	3.94	70		18.1	4.47	71		18.0	4.2	141		0.21	0.810	0.002	0.09

OM - orthodox medicine

NCM - new complementary medicine

ECM - established complementary medicine

HLOC - health locus of control

Planned comparisons on the DVs between OM clients and only the new CM clients were also performed to examine if the choice to use CM was motivated by a greater health awareness, internal control of health, and dissatisfaction with medical doctors, and less of a belief in powerful others to control their health. New CM clients did have a greater health awareness than the OM clients, $t(196) = -2.96, p < .003$, and were also less satisfied with OM doctors than the OM clients, $t(196) = 2.50, p < .01$ (see Table 3). However, the predicted differences in internal and powerful other health locus of control were not found, with OM clients and CM clients showing the same levels of both a belief in internal control over health, $t(196) = -0.24, p < .81$, and a belief that powerful others control their health, $t(196) = .064, p < .52$.

Health awareness and internal health locus of control were also compared between the new CM clients and the established CM clients in order to determine if these dimensions increased with increased CM usage over time. Established CM clients did show increased health awareness over new CM clients $t(196) = -2.24, p < .02$ (see Table 3). There were no changes in a belief of self control over health between the new and the established CM clients, $t(196) = -.82, p < .41$.

Other comments about OM. About half of the participants (49.7%) chose to make comments regarding their experiences with medical doctors at the end of the DSQ. These were rated and recoded as positive, negative, or neutral (neither positive or negative or both positive and negative) comments. There was a trend that new CM clients made more negative comments than the OM clients (45.9% vs. 28.6%) and a

larger proportion of established CM clients made more neutral comments than OM clients (43.9% vs. 28.6%). These differences in response patterns across the groups were not significant, $\chi^2(4, N = 99) = 5.14, p < .27$.

Personality variables

In order to assess the impact of dispositional characteristics on the motivation to choose complementary medicine, the five factors of neuroticism, extraversion, openness, agreeableness, and conscientiousness were examined using SPSS ANOVA and planned comparisons between OM clients and new CM clients. Items were first reverse scored so that higher values reflected higher ratings on each domain. To keep the experiment wise error rate at $p = .05$, the alpha level used for significance for the comparisons was .01. Only the ANOVA for openness was significant, $F(2, 195) = 3.79, p < .02$ (see Table 4 for means and standard deviations). The contrast of OM clients with new CM clients was also significant for the openness dimension, $t(193) = 2.75, p < .007$, with the new CM clients showing a greater openness to new experiences ($M = 6.44, SD = 2.36$) than the OM clients ($M = 5.20, SD = 2.38$). Openness tended to decline in the established CM client group ($M = 5.86, SD = 2.79$), although a post hoc analysis revealed that this difference was not significant, $t(193) = -1.37, p < .172$. OM clients did not differ from NCM clients in neuroticism, $t(194) = 1.03, p < .30$, extraversion, $t(193) = 0.55, p < .58$, agreeableness, $t(193) = 0.25, p < .80$, or conscientiousness, $t(194) = -0.93, p < .36$.

Table 4

Mean scores of personality variables as a function of client group.

Personality variable	Client Group								
	OM			NCM			ECM		
	M	SD	n	M	SD	n	M	SD	n
Neuroticism	4.05	2.28	57	4.47	2.19	70	4.60	2.37	70
Extraversion	4.88	2.59	56	5.14	2.78	70	4.79	2.75	70
Openness	5.20	2.38	56	6.44	2.36	70	5.86	2.79	70
Agreeableness	5.96	2.17	56	6.07	2.70	70	6.51	2.22	70
Conscientiousness	6.51	2.43	57	6.10	2.50	70	6.80	2.48	70

OM - orthodox medicine client

NCM - new complementary medicine client

ECM - established complementary medicine client

Attitudes towards CM use

Attitudes towards CM use were assessed by examining the proportion of individuals in each group who endorsed each of the seven items reflecting the participants' intentions for future CM use. Since some individuals endorsed more than one item, chi square analyses could not be performed to test for significant differences among the items within the groups. Instead, significant patterns of endorsement were tested among the groups for each item. Full results are presented in Table 5. Only 4 (6.9%) OM clients indicated that they were not interested in trying complementary medicine, and 1 (1.7%) OM client responded that they had tried CM and would probably not use CM again in the future. No new CM clients or established CM clients endorsed either of these two items. Since both these items had cell counts fewer than 5, no chi square analyses were performed. CM clients (NCM and ECM) were more likely than OM clients to endorse that they had tried at least one complementary therapy and would probably try more in the future, unconditionally, $\chi^2(2, N = 199) = 52.07, p < .000$. However, more OM clients (51.7%) than NCM (35.7%) or ECM (22.5%) clients said that they would try a complementary therapy if someone they trusted recommended it to them, $\chi^2(2, 199) = 11.85, p < .003$. For the remaining three items, which suggested conditional intention to use complementary therapy, OM, NCM and ECM clients had similar patterns of responding. Thus, the groups did not differ in their proportion of endorsements for the use of CM if there were no additional costs, $\chi^2(2, 199) = 0.15, p < .99$, if they had more information

Table 5

Attitudes towards future complementary medicine use as a function of client group.

	Client Group						χ^2	p
	OM	NCM	ECM					
	n = 58	n = 70	n = 71					
Intentions for future CM use	endorsed	endorsed	endorsed	% (freq.)	% (freq.)	% (freq.)		
Not interested in trying CM	6.9 (4)	0.0 (0)	0.0 (0)				----	----
If someone I trusted had a good experience with CM	51.7 (30)	35.7 (25)	22.5 (16)				11.85	.003 *
If no additional costs for CM	34.5 (20)	34.3 (24)	35.2 (25)				0.02	.993
If CM was more accessible	8.6 (5)	14.3 (10)	14.1 (10)				1.16	.560
If I had more information on CM	37.9 (22)	32.9 (23)	26.8 (19)				1.85	.397
Will try more CM in the future	19.0 (11)	74.3 (52)	74.6 (53)				52.07	.000 **
Will not use CM again	1.7 (1)	0.0 (0)	0.0 (0)				-----	-----
Other responses	3.4 (2)	7.1 (5)	19.7 (14)				10.28	.006 *

CM - complementary medicine; OM - orthodox medicine client; NCM - new complementary medicine client

ECM - established complementary medicine client

Note: Chi-square tests are for $df = 2$ and $n = 199$.

Where chi-square values are not given test was not performed due to cell frequencies less than 5.

*significant at $p < .01$, ** significant at $p < .001$

about CM, $\chi^2(2, 199) = 1.85, p < .40$, or if CM was more accessible to them, $\chi^2(2, 199) = 1.16, p < .56$.

Reasons for using CM

Some of the possible reasons why complementary medicine clients use CM were assessed by chi-square analyses of the endorsement patterns per item between the NCM and ECM groups. A within group analysis comparing items was not performed since multiple endorsements by some participants violated the chi square independence assumption. Both new CM clients and the established CM clients had similar patterns of responding for all six items. (Full results are presented in Appendix D). However, the most frequently endorsed reasons for both groups were that complementary medicine allowed them to take a more active role in their health (51.8%), and that orthodox medicine was not effective for their health problem, (41.8%). The least endorsed reason for using CM by both groups was because they had difficulty communicating with their medical doctor (7.1%).

New CM clients were also compared to established CM clients in terms of whether they used CM to replace or to supplement OM. The majority of both groups (89.8%) responded similarly that they used complementary medicine in addition to orthodox medicine, $\chi^2(1, 140) = 0.63, p < .73$.

Types of CM used

For each of the four complementary therapies listed (chiropractic, homeopathy/naturopathy, acupuncture, and massage therapy) a chi-square analysis

was performed in order to determine differences in the use of each therapy across the groups. Overall, fewer OM clients than CM clients had tried chiropractic, $\chi^2(2, 199) = 48.18, p < .000$, homeopathy or naturopathy, $\chi^2(2, 199) = 43.82, p < .000$, acupuncture, $\chi^2(2, 199) = 23.18, p < .000$, and massage therapy, $\chi^2(2, 199) = 62.18, p < .000$, whereas more established CM clients had tried each of these complementary therapies (see Appendix E for full results). In addition, OM clients were less likely to have tried another type of complementary therapy, such as reiki or iridology (1.7%) than either new CM clients (37.9%), or established CM clients (60.3%), $\chi^2(2, 199) = 35.25, p < .000$. The most frequently tried type of complementary therapy by an OM user was chiropractic (32.8%). Overall, 58 participants (including a lone OM client) had tried one or more other complementary therapies, excluding yoga, tai chi, and meditation. A total of fifteen complementary therapies were listed beyond the four provided. The most popular of these were reiki, reflexology, aroma therapy, and herbalism. A full listing of the other complementary therapies tried is given in Appendix E.

Medical history

For each group the number of health problems reported in the last year was summed and compared among the groups with a one-way analysis of variance using SPSS ANOVA. The number of health problems varied as a function of client type, $F(2, 196) = 5.23, p < .006$. A series of post hoc pairwise comparisons was made using Scheffe's criterion in order to determine which differences were significant. The

results showed that the established CM clients had more health problems ($M = 5.28$, $SD = 2.47$) than both the new CM clients ($M = 4.32$, $SD = 2.07$), $t(196) = -2.48$, $p < .046$, and the OM clients ($M = 4.09$, $SD = 2.21$), $t(196) = -2.99$, $p < .013$.

The groups were then assessed in terms of each health problem to see if the types of illnesses experienced differed among the groups. Results were significant for headaches, $\chi^2(2, 199) = 7.47$, $p < .024$, back problems, $\chi^2(2, 199) = 12.06$, $p < .002$, and chronic pain, $\chi^2(2, 199) = 19.35$, $p < .000$ (see Table 6). A larger proportion of established CM clients reported having headaches (73.2%), back problems (87.3%) and chronic pain (45.1%), whereas OM clients were least likely to experience chronic pain (10.3%). There were no differences among the groups in illness reporting for heart/blood pressure problems, digestive problems, cancer, respiratory problems, allergy/skin problems, diabetes, insomnia, arthritis, flu or colds, or other illnesses.

For those who experienced a health problem, chi-squared analyses were performed in order to determine if the groups differed in terms of who sought any type of treatment for that health problem versus those who sought no treatment. There were significant group differences for back problems, $\chi^2(2, 154) = 45.35$, $p < .000$; headaches, $\chi^2(2, 126) = 13.84$, $p < .001$; and digestive problems, $\chi^2(2, 87) = 8.040$, $p < .018$. In general, the established CM clients were more likely to seek treatment for these problems than not get any type of treatment (see Table 7). All participants who reported having cancer, diabetes, and other illnesses sought treatment for their problems. Other illnesses included depression, fatigue, environmental sensitivities and

reproductive problems. (For a full list of the other illnesses reported see Appendix F). The remaining illnesses could either not be tested due to low cell frequencies or the results were non-significant. However, one trend of note is that for the problems which could be perceived as more serious or life threatening (i.e. cancer, respiratory problems, heart problems, and diabetes) all or almost all of the participants reporting these problems had sought treatment in the last year.

The types of treatment used by those reporting seeking treatment for a health problem was examined for the two CM client groups. Orthodox medicine clients were not included since by definition OM clients used OM treatment. Depending on the illness, several trends are seen in the data presented in Table 8. A greater proportion of new CM clients used OM treatment as opposed to CM treatment alone or with OM for respiratory problems (78.6%), allergies or skin problems (75.7%), and digestive problems (47.6%). Both CM client groups used more CM alone or in combination with OM for back problems (91.2 %) and chronic pain (91.5%) than pure OM treatment. For the more serious health issues of cancer and heart problems or high blood pressure, all or almost all CM clients chose orthodox medicine for treatment. Very few established CM clients used OM treatment for headaches (0.07%).

Table 6

Health problems experienced as a function of client type.

Health problem	Client Group			χ^2	p
	OM	NCM	ECM		
	n = 58	n = 70	n = 71		
	% (freq.)	% (freq.)	% (freq.)		
Back problems/muscle strain	62.1 (36)	80.0 (56)	87.3 (62)	12.1	.002
Headaches/migraines	50.0 (29)	64.3 (45)	73.2 (52)	7.47	.024
Heart problems/high blood pressure	15.5 (9)	7.1 (5)	18.3 (13)	4.01	.134
Digestive problems	39.7 (23)	40.0 (28)	50.7 (36)	2.19	.334
Cancer	5.2 (3)	5.7 (4)	7.0 (5)	—	—
Respiratory problems	29.3 (17)	21.4 (15)	28.2 (20)	1.26	.533
Allergies/skin problems	55.2 (32)	42.9 (30)	52.1 (37)	2.17	.338
Diabetes	3.4 (2)	4.3 (3)	2.8 (2)	—	—
Insomnia	20.7 (12)	32.9 (23)	39.4 (28)	5.26	.072
Arthritis	25.9 (15)	24.3 (17)	23.9 (17)	0.07	.966
Chronic pain	10.3 (6)	25.7 (18)	45.1 (32)	19.4	.000
Flu or cold	72.4 (42)	64.3 (45)	66.2 (47)	1.02	.601
Other health problems	19.3 (11)	20.0 (14)	33.8 (24)	4.88	.087

OM = orthodox medicine user

NCM = new complementary medicine user

ECM = established complementary medicine user

Note: Chi-square tests are for 2 degrees of freedom and N = 199.

Where chi-square values are not given test was not performed due to cell frequencies less than 5.

Table 7

Percent of participants seeking treatment (OM, CM or both) by client type and health problem

Health problem	n	Client Group			χ^2	p
		OM	NCM	ECM		
		% (freq.)	% (freq.)	% (freq.)		
Back problems	154	52.8 (19)	94.6 (53)	98.4 (61)	45.4	.000
Headaches/migraines	126	48.3 (14)	73.3 (33)	86.5 (45)	13.8	.001
Digestive problems	87	60.9 (14)	75.0 (21)	91.7 (33)	8.04	.018
Allergies/skin problems	99	84.4 (27)	96.7 (29)	91.9 (34)	—	—
Insomnia	63	58.3 (7)	78.3 (18)	92.9 (26)	—	—
Arthritis	49	66.7 (10)	82.4 (14)	94.1 (16)	—	—
Chronic pain	56	50.0 (3)	83.3 (15)	100.0 (32)	—	—
Flu or cold	134	69.0 (29)	71.1 (32)	87.2 (41)	4.97	0.1
Other health problems	49	100.0 (11)	100.0 (14)	100.0 (24)	—	—
<u>Serious health problems</u>						
Heart problems/ high blood pressure	27	77.8 (7)	80.0 (4)	92.3 (12)	—	—
Cancer	12	100.0 (3)	100.0 (4)	100.0 (5)	—	—
Respiratory problems	52	100.0 (17)	93.3 (14)	95.0 (19)	—	—
Diabetes	7	100.0 (2)	100.0 (3)	100.0 (2)	—	—

OM - orthodox medicine client; NCM - new complementary medicine client;
ECM - established complementary medicine user

Note: Chi-square tests are for 2 degrees of freedom and N = 199.

Where chi-square values are not given test was not performed due to cell frequencies less than 5.

Table 8

Percent of complementary medicine clients seeking different types of treatment as a function of health problem.

Client Group	n	Treatment type							
		OM				CM			
		NCM	ECM	NCM	ECM	NCM	ECM	NCM	ECM
Health problem		% (freq.)	% (freq.)	% (freq.)	% (freq.)	% (freq.)	% (freq.)	% (freq.)	% (freq.)
Back problems/muscle strain	114	17.0 (9)	1.6 (1)	41.5 (22)	52.5 (32)	41.5 (22)	41.5 (22)	41.5 (22)	45.9 (28)
Headaches/migraines	78	42.4 (14)	6.7 (3)	24.2 (8)	42.2 (19)	33.3 (11)	33.3 (11)	33.3 (11)	51.1 (23)
Digestive problems	54	47.6 (10)	30.3 (10)	28.6 (6)	36.4 (12)	23.8 (5)	23.8 (5)	23.8 (5)	33.3 (11)
Allergies/skin problems	63	75.9 (22)	41.2 (14)	6.9 (2)	20.6 (7)	17.2 (5)	17.2 (5)	17.2 (5)	38.2 (13)
Insomnia	44	33.3 (6)	26.9 (7)	16.7 (3)	38.5 (10)	50.0 (9)	50.0 (9)	50.0 (9)	34.6 (9)
Arthritis	30	50.0 (7)	37.5 (6)	7.1 (1)	25.0 (4)	42.9 (6)	42.9 (6)	42.9 (6)	37.5 (6)
Chronic pain	47	13.3 (2)	6.3 (2)	13.3 (2)	28.1 (9)	73.3 (11)	73.3 (11)	73.3 (11)	65.6 (21)
Flu or cold	73	46.9 (15)	36.6 (15)	9.4 (3)	26.8 (11)	43.8 (14)	43.8 (14)	43.8 (14)	36.6 (15)
Other health problems	38	42.9 (6)	20.8 (5)	0.0 (0)	16.7 (4)	57.1 (8)	57.1 (8)	57.1 (8)	62.5 (15)
Serious health problems									
Heart problems	9	100.0 (3)	100.0 (6)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
Cancer	9	75.0 (3)	80.0 (4)	25.0 (1)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	20.0 (1)
Respiratory problems	33	78.6 (11)	42.1 (8)	7.1 (1)	15.8 (3)	14.3 (2)	14.3 (2)	14.3 (2)	42.1 (8)
Diabetes	5	100.0 (3)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	100.0 (2)

OM - orthodox medicine; NCM - new complementary medicine client; ECM - established complementary medicine client

Discussion

This research was concerned with identifying and elucidating the motivations, beliefs, and characteristics of individuals who choose to use complementary medicine. In addition, the impact of long term use of complementary medicine on these individuals' beliefs was explored. Previous investigations into why some people choose CM involved British and European populations, and made inferences about motivation based on an undifferentiated sample of complementary medicine users. Thus, it was unclear if those findings reflected differences that resulted from experience with CM or motivated the decision to choose CM. The current research sought to clarify and extend the findings of the earlier investigations.

Motivations to use CM

Health awareness. Consistent with previous research, this study found that combined new and established complementary medicine clients have a higher health awareness than orthodox medicine clients. More specifically, the hypothesis that health awareness was a contributing factor in the choice to use complementary medicine was also supported, since the new CM clients were also more health aware than the OM clients. These results suggest that emphasis on preventative health and healthy living promoted by the various complementary therapies appeals to and matches the greater concern of individuals who try CM for these lifestyle factors . Thus, health awareness can be considered an important pull factor involved in the motivation to go outside orthodox treatment and try CM.

Dissatisfaction with doctors. Dissatisfaction with medical doctors was also higher in CM clients than the OM clients, replicating earlier results from the British studies (Furnham & Smith, 1988; Furnham & Bhagrath, 1993; Furnham & Kirkcaldy, 1996). This result is similar to the Canadian study of gastroenterology outpatients which found that only 54% of CM users were satisfied with conventional medicine as compared to 85% of OM clients (Verhoef et al., 1990). The current study demonstrates that the finding of lower satisfaction with orthodox medicine in CM users can be generalized to other Western populations as well as across different medical populations. More importantly, since the new CM clients also were more dissatisfied with doctors than OM clients as expected, a more direct inference about the motivation to use CM can be made. This variable is clearly a push factor suggesting that those who choose CM may do so out of feeling that their expectations for doctor-patient communication and concern, and effective treatment are not being met.

The analysis of the comments made about doctors showed a trend towards the CM clients having fewer positive remarks and more negative or neutral comments about doctors. Although the pattern of responding did not reach significance, it does follow the results of the DSQ. As well, the overall content of the comments seems to mirror the areas addressed by the DSQ: doctor communication, taking time with the client, and effectiveness of the treatment (see Appendix G for some examples).

Negative affect. Contrary to other investigations, the complementary medicine clients did not show higher levels of negative affect than the orthodox medicine clients. This result was expected and can be easily explained by differences in methodology, since the NEM scale does not contain any items that are contaminated with content about somatic concerns. It has been suggested that the finding of higher levels of distress in the CM clients may be due to content overlap between negative affect and somatic complaints inherent within the Langner-22 scale (Furnham & Smith, 1988). Thus, the use of the NEM in the current study revealed no differences between the groups on this variable. The absence of differences between groups on this dimension is important because it suggests that the higher dissatisfaction of CM clients towards OM is not the result of being discontent with everything in general, but is due specifically to being displeased with OM doctors.

Locus of control. Although previous research suggested that CM clients would score higher on internal health locus of control (Furnham & Bhagrath, 1993) and lower on powerful others locus of control (Furnham & Bhagrath, 1993; Furnham & Kirkcaldy, 1996), the results of this study failed to confirm this. Not only were CM clients as a whole similar to OM clients on these two dimensions, but the new and infrequent CM clients also scored about the same as the OM clients. One reason for the discrepancy between the current results and previous studies could be the different measures used.

All of the British studies used the same measure for assessing health locus of

control, the Health Locus of Control Scale (Lau, 1982). However, six of the seven items in the provider control over health subscale contain the word "doctor", setting up an obvious bias in favour of OM clients endorsing them more strongly, and CM clients scoring lower. By changing any reference to doctor to the term "health care professionals" in the MHLC used in the current study, this bias was removed and therefore it was less likely that any differences between CM and OM clients would be found. Furthermore, a greater proportion of the total sample (71%) was obtained from OM offices than from CM offices. In contrast, the European studies (Furnham & Bhagrath, 1993; Furnham & Forey, 1994; Furnham & Kirkcaldy, 1996) sampled equally from OM clinics and CM clinics, resulting in all of their CM clients being obtained from CM offices. Thus, it could be expected that since more OM, NCM and ECM clients were currently consulting with general practitioners in the current study, they might score about the same on the powerful others health locus of control.

The reasons for failing to obtain differences in internal health locus of control are less obvious. Although the overall content of the items in the Lau HLOC (Lau, 1982) scale is similar to the MHLC, two of the items on the Lau scale are clearly different. Both address preventative health issues which would be more appealing to CM clients, and CM clients and OM clients did in fact differ the most in their responses to these two items (Furnham & Bhagrath, 1993; Furnham & Forey, 1994). One of these items that states "Anyone can learn basic health principles that can prevent illness", and appears to assess aspects of health awareness and not just self

control over health.

Another reason for the failure to find differences in self control over health among the groups could be related to differences in health status among the groups. In the current study the CM clients tended to have more back problems, headaches and chronic pain than the OM clients, and the established CM clients had significantly more health problems than the OM or new CM clients. However, no specific health history data were collected for the Furnham and Bhagrath (1993) study which found the CM clients to have greater internal control. Furthermore, in a sample of CM clients that reported more digestive problems and back pain, Furnham and Forey (1994) found that CM clients did not have a greater sense of control over their health.

Research on chronic pain and other chronic illnesses suggest that not only do individuals with chronic conditions tend to have lower scores on internal health locus of control as compared to general populations (Crisson & Keefe, 1988), but the levels of perceived control can fluctuate depending on the type and course of the illness (Felton & Revenson, 1984), and the severity of the pain (Jensen & Karoly, 1991). Furthermore, individuals with more health problems tend to score lower in control over health than those with fewer health problems (Williams & Stout, 1984). Therefore, it is possible that an inherent increased internal locus of control in the CM clients over the OM clients (Furnham & Bhagrath, 1993) is attenuated by the presence of a greater number of chronic health problems reported by the CM clients. Consequently, CM clients could be expected to have about the same sense of personal

control over health as OM clients (Furnham & Forey, 1994).

Personality. This research also investigated the previously unexplored impact of personality on the choice to use CM. The only personality dimension that the OM clients and new CM clients differed on was openness. Costa & McCrae (1985) characterize openness as a receptiveness and curiosity towards new ideas, approaches and experiences, and a willingness to try new things. Not surprisingly, the new CM clients rated themselves higher on this dimension than the OM clients, reflecting their willingness to explore new methods of health care. Openness is also related to the rational expression of emotion (Marshall et al, 1994). Thus, for new CM clients who are feeling dissatisfied with orthodox medicine, the rational choice may be to explore their options regarding other methods of health care.

One other interesting finding was that the established CM clients are not as open to new experiences as the new CM clients. This may seem unusual given that the established CM clients had tried more other types of complementary therapies than the new CM clients. However, the established CM clients had been exploring and using CM for 5 years or more and had settled into a lifestyle that included CM. The higher openness in the new CM clients may reflect their unsettledness about what type of health care to use, whereas with time and experience with CM they may become more committed to their choice of CM and less likely to explore other options.

The lack of differences between CM clients and OM clients on the four remaining personality dimensions implies that these may not be important predictors

of complementary medicine use. Neuroticism can be conceptualized as a measure of negative affect, and would tap a similar aspect of character as the NEM. Therefore, it would not be expected that there would be differences between the new CM clients and the OM clients on this trait. Although extraversion is associated with health behaviours such as exercise (Mechanic & Cleary, 1980), it indicates a desire for social interaction and lively activity. This preference would not necessarily be satisfied by using CM, and so no differences between CM and OM clients would be expected.

Both agreeableness and conscientiousness have been linked to positive health habits and attitudes (Booth-Kewley & Vickers, 1994; Lemos-Giraldez & Fidalgo-Aliste, 1997). Thus it may have been expected that CM clients with their greater health awareness would have scored higher on these dimensions. Although there was a trend for established CM clients to score higher on these two traits, other selection factors in the entire sample that included OM clients may have obscured any potential differences. Individuals who are agreeable tend to be good natured and easy going (Costa & McCrae, 1985), and would be more cooperative with a request to complete a questionnaire. Conscientious individuals are dutiful organized, responsible and compliant (Costa & McCrae, 1985). Therefore, they were probably more likely to take the time and effort to fill out a survey in their health practitioner's office. There was also a very high completion rate with only 4 respondents leaving significant portions of the questionnaire incomplete. Finally, when it is considered that the questionnaires were returned to the researchers with all of the sections put back in order and

paperclip intact it is reasonable to assume that the entire sample was highly conscientious.

Impact of CM on health beliefs

The impact of complementary medicine on health beliefs was assessed by comparing the new CM clients with the established CM clients on health awareness and internal health locus of control. As expected, the established CM clients had significantly greater health awareness than the new CM clients. This implies that experiences with CM over time tend to strengthen and enhance one's health awareness, perhaps as the CM practitioner better educates their clients into an awareness of healthier lifestyles.

Along with the finding that new CM clients had more health awareness than OM clients, these results clarify and extend the previous findings which interpreted the difference in health awareness between CM and OM clients as simply the reason for choosing CM (Furnham & Bhagrath, 1993; Furnham & Forey, 1994). With a better delineation of the CM client group the current results now suggests a reciprocal causation between health awareness and the use of CM. That is, individuals are drawn to CM because it matches their health consciousness, and their subsequent experiences with CM then tend to maintain and strengthen this health awareness.

The failure to find a greater sense of self control over health in the established CM group as compared to the new CM group is likely due to the problems regarding differences in locus of control measures and illness profiles previously mentioned.

Although the new CM clients and the established CM clients had similar illness profiles, the established CM clients reported significantly more health problems (especially chronic pain), which would tend to decrease their sense of control over health. That is, differences in the health locus of control assessment device used in the current research as compared to other studies, as well as illness profile distinctions, are likely responsible for this hypothesis not being supported.

Exploratory findings

Other reasons for CM use. When the CM clients were asked what their main reasons for using complementary medicine were, two other motivations for using CM emerged. The majority of both new CM clients and established CM clients said that they used CM because they believed that it allowed them to take a more active part in maintaining their health. This result may reflect the desire for maintaining a good health awareness and the behaviours that accompany it, and mirrors the results obtained by the Health Awareness Questionnaire. It also suggests that the pull to CM, because of its philosophy of client participation in their own health, is a strong incentive for continued use of CM.

The next most important reason for using CM was because CM clients felt that OM was not effective for their health problem. This may be due to the fact that CM clients in the current study, as in other studies (Moser et al., 1996; Vincent & Furnham, 1996), tended to report more health problems that are chronic in nature, and such problems may be perceived to be less effectively treated by orthodox medicine.

Nonetheless, this is clearly a push factor that reflects the CM clients' dissatisfaction with OM as measured by the Doctor Satisfaction Questionnaire (DSQ). However, two of the least endorsed reasons were that OM had unpleasant side effects and because they had difficulty communicating with their medical doctors. Despite the finding that CM clients were dissatisfied with OM, and three of the items on the DSQ assess satisfaction with doctor-patient communication, poor communication did not emerge as a prominent reason for choosing CM. Clearly, poor communication with doctors is only one dimension of dissatisfaction, and it alone is not an important incentive for using CM. Rather it may contribute to the more global sense of dissatisfaction of CM clients with OM as reflected in the DSQ scores. Thus, the dissatisfaction of CM clients which pushes them to use CM appears to be more pragmatically based. If OM doesn't work for treating their health problem, they will seek other treatments such as CM that they feel will work.

Both the ineffectiveness of OM and the attraction of active participation in one's health were also among the top four reasons for using CM found by Vincent and Furnham (1996). This suggests that CM clients are simultaneously pushed away from OM and pulled towards CM use. However, they do not abandon OM completely, but instead use CM to supplement OM treatments. This study found as previous research did (Downer et al., 1994; Murray & Shepherd, 1993; Thomas, Carr, Westlake, & Williams, 1991) that almost all CM clients use CM in addition to OM.

Intentions to use CM. An exploration of the intentions for future CM use revealed that the majority (72.8%) of the OM clients would try CM if certain conditions were met, and another nineteen percent expressed that they had tried one complementary medicine in the past and would probably try more in the future. The proportion of OM clients interested in CM in the current study exceeds that of a study of irritable bowel syndrome OM patients (41%) who said they would consider seeking CM consultation (Smart, Mayberry, & Matkinson, 1986). Given that very few OM clients in our study had no intention of trying CM, and over half of the OM clients had tried a CM in the past, it is likely that there was a selection bias for OM clients who were not currently using but were interested in or curious about CM. The sign advertising the "health services study" in the health care offices listed several types of health care services, including some complementary therapies. This may have prompted those OM clients who were not interested in CM to avoid participating, resulting in a greater number of OM clients in the study who had more favourable attitudes towards CM.

The condition for use of CM that separated the OM clients from the CM clients was if someone they trusted had a good experience with CM and recommended it to them. Although intention by no means ensures future action, this condition may be an important indicator of what it would take for an OM client to venture into the realm of complementary medicine. Consequently, when an individual becomes a CM client, perhaps after being recommended to CM by a friend, continued

use of CM would not be as contingent upon receiving further recommendations.

Furnham & Beard (1995) found that CM clients were more likely than OM clients to know someone that had had effective treatment from complementary medicine.

Similarly Verhoef, Sutherland and Brkich (1990) found that over a third of CM clients felt that they had been encouraged to try CM by other people, especially relatives.

Together these findings imply that some of the CM clients were previously OM clients that had been recommended to CM, and therefore some of the OM clients in the current study could become future CM clients if they received an endorsement of CM from a friend or relative.

Unlike the OM clients, the majority of both CM client groups said that they would unconditionally try more types of CM in the future. The issue of additional costs for CM was not a major disincentive for future CM use for any of the OM or CM clients, and is similar to previous findings (Murray & Shepherd, 1993).

Accessibility was the least endorsed condition for CM use for all groups, suggesting that availability of CM for those who may be interested in trying it is adequate.

Characteristics of CM clients. Although other studies have found that CM clients tend to be younger (Furnham & Bhagrath, 1993; Murray & Shepherd, 1993), or older (Furnham & Kirkcaldy, 1996) than OM clients, and more likely to be female than OM clients (Furnham & Bhagrath, 1993; Furnham & Kirkcaldy, 1996), no such differences were found in the current study. Instead, CM clients were similar to OM clients in age, gender, ethnic background, and employment status. The current results

matched those of other studies which found that compared to OM clients, CM clients tended to have higher incomes (Furnham & Bhagrath, 1993), and a higher education level (Furnham & Forey, 1994). Given that there was a trend towards CM clients being more likely to be married than single, this could explain their higher income level relative to OM clients. However, this does not explain their higher education level which remains as a distinguishing characteristic of CM clients. In any case, this suggests that those who choose CM are perhaps better able to understand medical possibilities and make discriminating choices (Fulder & Munro, 1985).

New CM clients were similar to OM clients in their number of health complaints, whereas the established CM clients tended to have more health problems than both these groups. Specifically, the established CM clients reported more back problems, headaches and chronic pain than the OM clients, and were more inclined to seek treatment for headaches, digestive problems, and insomnia than the OM clients. They also tended to treat these problems with CM alone or in conjunction with OM. Similarly, Eisenberg and associates (1993) found that individuals who suffered from back problems and chronic pain were more likely to be CM clients. This also matches the opinions of Canadian physicians who perceive CM to be needed the most for musculoskeletal problems, chronic pain and chronic illnesses (Verhoef & Sutherland, 1995).

The medical profile of the new CM clients tends to place them somewhere in between OM clients and the established CM clients. Not unlike the established CM

users, the new CM clients tended to have more back problems and headaches than OM clients, and tended to seek treatments for headaches and digestive problems more often than the OM clients. They also used CM alone or together with OM for treating their back problems, headaches, and chronic pain. However, CM clients were more like OM clients in that they relied more on OM for treating respiratory problems, allergies or skin problems, and digestive problems. The new CM clients also tended to avoid using CM treatments alone for flus and colds, arthritis, and insomnia. Thus, new CM clients appear to be more cautious and restrictive in their use of CM than the established CM clients, perhaps because they are just starting to become familiar with the different therapies and their potential treatment applications. The established CM clients who have more experience with CM tend to use it for a broader range of health problems and not just those considered to be mild or common.

Summary

Overall, the results of this research replicated many of the findings of the European studies regarding CM clients and why they use complementary medicine. Furthermore, this study has clarified and extended previous results by identifying two distinct subgroups of complementary medicine clients and creating profiles of the beliefs and characteristics of each. This allows for a better understanding of the motives of CM clients, and insight into the impact of CM on the clients' health beliefs.

New complementary medicine clients are more health aware, more open to new experiences, and less satisfied with orthodox medicine than OM clients. Thus

their motivation to try CM is a result of several factors including dissatisfaction with OM, especially its effectiveness, and an attraction to CM because it allows them to maintain and strengthen their sense of health consciousness through active participation in their own health care. Their initial ventures into trying CM tend to be more limited, using CM for relatively mild health issues such as back problems and headaches. They have the same number of health problems as the OM clients and still use OM treatments for many of these ailments.

With greater use of complementary medicine over time, CM clients tend to become more settled into using CM as a way of life after having tried more complementary therapies that are less mainstream. They remain dissatisfied with orthodox treatments, and tend to use CM for a broader range of health problems. They also have more health problems than either the new CM clients or the OM clients and these tend to be back problems, headaches and chronic pain. Through their experiences with CM, their health awareness is reinforced and increased, and they feel that they can take a more active role in maintaining their health.

Both new and established CM clients tend to have higher incomes and education levels than OM clients. Thus, as educated and discriminating health care consumers they use CM as a complement to OM, and treat more serious health problems such as cancer or heart problems with OM first.

Limitations of study

Overall, this study had a fairly large sample of health care users whose broad

age range and medical profiles allow the results to be generalized to other medical populations. However, the majority of the participants were female (77.5%) making it difficult to tell whether these results would also apply to male health care clients. In addition the participants were self selected which can introduce a selection bias that may have influenced the results.

As mentioned, the most obvious selection bias was that the OM clients that decided to participate in this study may have done so because they had more favourable attitudes towards complementary medicine. This likely inflated the proportion of OM clients who were interested in trying CM, making it difficult to know the actual level of interest in CM within an unbiased OM client sample. Another selection bias that may have occurred was that the participants who were most likely to take the time and effort to complete the questionnaire were highly conscientious. This may have obscured any potential differences between the CM and OM clients on this personality dimension. Future investigations that randomly select clients from within the health offices, as opposed to allowing self selection by the participants, would likely remedy these problems.

The setting in which the questionnaires were completed had both positive and negative implications for the results. Participants were unusually forthcoming in their comments and disclosure of medical information, something that probably would be more likely to occur since they were within the context of a medical or health care office where revealing of personal information is expected. However, since the

questionnaires were completed while waiting for their doctor's or CM practitioner's appointment, it is possible that time restraints prevented people from completing the open-ended questions more fully.

Finally, all of the health profile data were obtained through self report, without any verification by objective health records. Thus, it is possible that certain pertinent information regarding the clients' health profiles was not reported and could influence some of the conclusions drawn regarding the impact of client health profiles and their reasons for using CM.

Future research directions

This research focused on identifying some of the motivations for using complementary medicine. However, other factors such as onset of certain health problems may impact on the choice to use CM. This study only examined medical problems within the last year, but did not explore the onset of those problems in relation to beginning CM use. Perhaps some previous major health problem precipitated the use of CM. For example one participant indicated that although she had not suffered from cancer in the last year, she was diagnosed three years earlier, which happened to correspond to how long she had been using CM. Future research might examine the clients' past medical records in order to see if there is an association with disease or illness onset and the choice to use CM.

Since it may be the client's particular health complaint as much as their health beliefs that determines treatment choice (Furnham & Bhagrath, 1993), other

investigations might compare CM clients on the basis of whether their health problem was functional or organic. Verhoef, Sutherland, and Brkich (1990) found that clients with a functional disease were more likely to seek CM treatment than those whose disease had an organic basis. The ambiguity and difficulty in diagnosing and treating functional health problems may make these types of complaints seem less treatable with OM than with CM, and therefore provide a strong incentive to try complementary medicine.

Future investigations may also focus on correcting some of the methodological issues previously mentioned. Random sampling of participants as opposed to self selection, and the inclusion of objective measures of health status would help rule out possible confounding factors. As well, including a more objective measure of health behaviours, and not just a self report as in the HAQ, would help determine if CM clients actually engage in health promoting habits more frequently than OM clients. Although they may be more aware of the health promoting qualities of these habits, this does not ensure that they actually follow through with them or have healthier lifestyles.

Although past research has focused on a belief in personal control over health as being salient for understanding the use of CM, the tendency for CM clients to have illnesses that are longer in duration (Moser et al., 1996) and chronic (Vincent & Furnham, 1996) suggest that the predicted differences in control beliefs may not be found. As well, locus of control is an expectancy construct that describes the forces to

which an individual attributes outcomes (Rotter, 1966). However, locus of control is not a motivational variable that shows desire or effort for control (Shapiro, Schwartz, & Astin, 1996). In addition, the desire for control over one's own choices (Deci & Ryan, 1985) has been shown to be different from an expectancy for control (Burger, 1985; Burger & Cooper, 1979).

One of the main reasons for the CM clients choosing CM in the current study was because they believed that CM allowed them to take a more active role in their health. This may reflect a desire for being active in maintaining their health, and not necessarily be the same as expecting they can control their health outcomes. Future investigations into the motivations to use CM should make distinctions between expectancies for control over health outcomes and the desire to be an active participant in one's health. Investigations of the CM clients' desire to participate more fully in their health, either through preventative health behaviours or sharing treatment choices with their health professionals, may reveal the important distinction between CM clients and OM clients that the previous investigations of health locus of control have failed to discover.

References

- Booth-Kewley, S., & Vickers, R. R. (1994). Associations between major domains of personality and health behaviour. Journal of Personality, 62, 281-298.
- Brosschot, J. F., Gebhardt, W. A., & Godaert, G. L. R. (1994). Internal, powerful others and chance locus of control: Relationships with personality, coping, stress and health. Personality and Individual Differences, 16, 839-852.
- Burisch, M. (1984). Approaches to personality inventory construction: A comparison of merits. American Psychologist, 39 (3), 214-227.
- Burger, J. M. (1985). Desire for control and achievement-related behaviours. Journal of Personality and Social Psychology, 48, 1520-1533.
- Burger, J. M., & Cooper, H.M. (1979). The desirability of control. Motivation and Emotion, 3, 381-393.
- Crisson, J. E., & Keefe, F. J. (1988). The relationship of locus of control to pain coping strategies and psychological distress in chronic pain patients. Pain, 35, 147-154.
- Costa, P. T., Jr., & McCrae, R. R. (1985). Neo Five Factor Inventory : Form S. Odessa, Florida: Psychological Assessment Resources.
- Costa, P. T., Jr., & McCrae, R. R. (1985). NEO PI/FFI manual supplement. Odessa, Florida: Psychological Assessment Resources.
- Craighead, L. W., Craighead, W. E., Kazdin, A. E., & Mahoney, M. J. (1994). Cognitive and behavioral interventions: An empirical approach to mental health

problems. Boston: Allyn & Bacon.

Deci, E., & Ryan, R. (1985). Intrinsic motivation and self-determination in human behaviour. New York: Wiley.

Ditto, P. H., Moore, K. A., Hilton, J. L., & Kalish, J. R. (1995). Beliefs about Physicians: Their role in health care utilization, satisfaction, and compliance. Basic and Applied Social Psychology, 17, 23-48.

Downer, S. M., Cody, M. M., McCluskey, P., Wilson, P. D., Arnott, S. J., Lister, T. A., & Slevin, M. L. (1994). Pursuit and practice of complementary therapies by cancer patients receiving conventional treatment. British Medical Journal, 309, 86-9.

Eisenberg, D. M., Kessler, R. C., Foster, C., Norlock, F. E., Calkins, D. R., & Delbanco, T. L. (1993). Unconventional medicine in the United States. The New England Journal of Medicine, 328(4), 246-252.

Felton, B. J., & Revenson, T. A. (1984). Coping with chronic illness: A study of illness controllability and the influence of coping strategies on psychological adjustment. Journal of Consulting and Clinical Psychology, 52, 343-353.

Fulder, S. J., & Munro, R. E. (1985). Complementary medicine in the United Kingdom: Patients, practitioners, and consultations. Lancet, 2, 542-545.

Furnham, A. & Beard, R. (1995). Health, just world beliefs and coping style preferences in patients of complementary and orthodox medicine. Social Science and Medicine, 40, 1425-1432.

Furnham, A. & Bhagrath, R. (1993). A comparison of health beliefs and behaviours of clients of orthodox and complementary medicine. British Journal of Clinical Psychology, 32, 237-246.

Furnham, A. & Forey, J. (1994). The attitudes, behaviours and beliefs of patients of conventional vs. alternative (complementary) medicine. Journal of Clinical Psychology, 32, 237-246.

Furnham, A. & Kirkaldy, B. (1996). The health beliefs and behaviours of orthodox and complementary medicine clients. British Journal of Clinical Psychology, 35, 49-61.

Furnham, A. & Smith, C. (1988). Choosing complementary medicine: A comparison of the beliefs of patients visiting a general practitioner and a homeopath. Social Science and Medicine, 26, 653-687.

Harkapaa, K., Jarvikoski, A., Mellin, G., Hurri, H., & Luome, J. (1991). Health locus of control beliefs and psychological distress as predictors for treatment outcome in low-back pain patients: Results of a 3-month follow-up of a controlled intervention study. Pain, 46, 35-41.

Hsieh, M., & Kagle, J. D. (1991). Understanding patient satisfaction and dissatisfaction with health care. Health and Social Work, 16(4), 281-290.

Jensen, M.P., & Karoly, P. (1991). Control beliefs, coping efforts, and adjustment to chronic pain. Journal of Consulting and Clinical Psychology, 59 (3), 431-438.

- Lau, R. R. (1982). Origins of health locus of control beliefs. Journal of Personality and Social Psychology, 42, 322-334.
- Lemos-Giraldez, S., & Fidalgo-Aliste, A. M. (1997). Personality dispositions and health-related habits and attitudes: A cross sectional study. European Journal of Personality, 11(3), 197-209.
- Little, B. R. (In press). Free traits and personal contexts: Expanding a social ecological model of well being. In W.B. Walsh, K.H. Craik, & R. Price (Eds.), Person environment psychology (2nd edition). New York: Guilford.
- Marshall, G., Wortman, C., Vickers, R., Kusalas, J., & Hervig, L. (1994). The five-factor model of personality as a framework for personality-health research. Journal of Personality and Social Psychology, 67(2), 278-286.
- Mechanic, D., & Cleary, P. D. (1980). Factors associated with the maintenance of positive health behaviour. Preventative Medicine, 9, 805-814.
- Moser, G., Tilinger, W., Sachs, G., Maier-Dobersberger, T., Wyatt, J., Vogelsang, H., Lochs, H., & Gangl, A. (1996). Relationship between the use of unconventional therapies and disease related concerns: A study of patients with inflammatory bowel disease. Journal of Psychosomatic Research, 40(5), 503-509.
- Murray, J. & Shepherd, S. (1993). Alternative or additional medicine? An exploratory study in general practice. Social Science and Medicine, 37 (8), 983-988.
- Rotter, J. B. (1966). Generalised expectancies for internal versus external control of reinforcement. Psychological Monographs, 80 (1), Whole no. 609.

Shapiro, D. H. Jr., Schwartz, C. E., & Astin, J. A. (1996). Controlling ourselves, controlling our world: Psychology's role in understanding positive and negative consequences of seeking and gaining control. American Psychologist, 51 (12), 1213-1230.

Smart, H. L., Mayberry, J. F., & Matkinson. (1986). Alternative medicine consultations and remedies in patients with the irritable bowel syndrome. Gut, 27, 826-828.

Smith, T. W., & Williams, P. G. (1992). Personality and health: Advantages and limitations of the five factor model. Journal of Personality, 60, 395-423.

Tabachnick, B., & Fidell, L. (1989). Using Multivariate Statistics. New York: Harper Collins.

Tellegen, A. (1982). Brief manual for the Differential Personality Questionnaire. Unpublished manuscript, University of Minnesota.

Thomas, K. J., Carr, J., Westlake, L., & B. T. (1991). Use of non-orthodox and conventional health care in Great Britain. British Medical Journal, 302, 207-210.

Verhoef, M. J., Sutherland, L. R., & Brkich, L. (1990). Use of alternative medicine by patients attending a gastroenterology clinic. Journal of the Canadian Medical Association, 142 (2), 121-125.

Verhoef, Marja J., & Sutherland, Lloyd R. (1995). General practitioners' assessment of and interest in alternative medicine in Canada. Social Science and Medicine, 41(4), 511-515.

Vingerhoets, A. J., Croom, M., Jeninga, A. J., & Menges, L. T. (1990).

Personality and health habits. Psychology and Health, 4, 333-342.

Vincent, C. & Furnham, A. (1996). Why do patients turn to complementary medicine? An empirical study. British Journal of Clinical Psychology, 35, 37-48.

Wallston, K. A., Maides, S., & Wallston, B. S. (1976). Health related information seeking as a function of health-related locus of control and health value. Journal of Research in Personality, 10, 215-222.

Watson, D., & Pennebaker, J. W. (1989). Health complaints, stress and distress: Exploring the central role of negative affectivity. Psychological Review, 96 (7), 234-254.

Williams, J. M., & Stout, J. K. (1984). The effect of high and low assertiveness on locus of control and health problems. The Journal of Psychology, 119, 169-173.

Appendix A

PARTICIPANT BRIEFING LETTER

In this study we are looking at people's use of different kinds of health services and treatments. These can include orthodox medicine and visiting a medical doctor, as well as alternative health services such as chiropractic, massage therapy, and homeopathy which are often referred to as complementary therapies. We are interested in examining the relationships among your beliefs about your health, your health behaviours (such as how often you drink coffee), your experiences with the different types of medical and health services (including general health problems), and your general moods (such as worry). Your participation in this study will contribute to a better understanding of these relationships which could provide suggestions as to how health professionals can better serve your needs.

All information gathered from participating in this research will be kept completely confidential, and will not be disclosed to your health professional. Your responses for this study will not be associated with your name and you will only be identified by a participant code number. This number is for administrative purposes only.

Your participation is not in any way related to the treatments and no treatment will be altered or withheld should you decide not to participate in this study. Furthermore, your participation in this study will not affect any current or future medical/health treatments that you receive. We will not request any medical information from your health professional, and only the information that you provide in the questionnaire will be used in this study. You are free to withdraw from the study at any time, and this will not have any effects on your treatment.

Only the researchers involved will be permitted to access any information that you give, and this information will remain anonymous. If a report of the study is sent to a scientific journal, all information will reflect group information rather than information about any specific individual.

If you decide to participate in this study, you will be asked to fill out the set of short questionnaires attached. This generally takes about 10 to 15 minutes to complete. There are no correct or incorrect answers to the questions. Please just answer the questions as best as you can, and as honestly as possible. However, you are not obligated to answer any question that you may feel uncomfortable with.

Your participation is greatly appreciated.

Fuschia Sirois, B.A., B.Sc.
Department of Psychology
Carleton University

Mary Gick, Ph. D.
Department of Psychology
Carleton University

Declaration of Informed Consent

Name of Participant: _____
(please print)

I have read the description of the research, and understand that this study looks at the relationships among my beliefs about my health, my health behaviours, my moods, and my experiences with different kinds of medical and health services. I understand that the results might be submitted for publication in a scientific journal, and that all information will be kept anonymous and disguised so that no personal identification can be made. I understand that all information will remain completely confidential and will not be released to my health care professional.

- (1) I have been informed that my participation in this study will involve completing a set of short questionnaires, and that this will take about 10 to 15 minutes.
- (2) I have been informed that my participation in this study is voluntary and that I may withdraw from the study at any time and for any reason.
- (3) I have been informed that my participation in this study does not affect my current or future medical/health treatments in any way.

(Date)

(please sign here)

PARTICIPANT DEBRIEFING LETTER

Dear Participant:

Thank you for your participation in this study conducted by Fuschia Sirois of the Department of Psychology, Carleton University, under the supervision of Mary Gick, Ph.D.. Research from Britain suggests that a person's attitude towards his or her health is associated with the type of medical or health treatments they prefer to use. This study represents a partial replication of the British research into the relationships between health beliefs and health service use to see if these results extend to a Canadian population. In addition, a growing interest by many people into complementary therapies for treating health problems has led to questions about who uses these health services and why. Through this study we hope to provide some answers about the use of these services.

Your participation in this study will help us to answer these questions and to gain a better understanding of the relationships between people's health beliefs and the type of treatment they choose. Through this information health professionals may gain more insight into their clients' needs so that they may serve them better.

Your responses in this study are completely confidential. Your name will never appear on the questionnaire or be associated with the results of the study. All results will reflect group findings, with no reference to any particular individual.

If you have any questions regarding this study, please feel free to contact Fuschia Sirois at 520-2600, extension 3781, or Mary Gick, Ph. D. at extension 2664. If you have any ethical concerns regarding this study you may contact Mary Gick, Ph. D. Chairman of the Ethics Committee, at extension 2664 or the Chairman of the Psychology Department, Kim Matheson, Ph.D., at extension 7513.

I thank you again for your participation in this study. It is greatly appreciated.

Sincerely,

Fuschia Sirois, B.A., B.Sc.
Department of Psychology
Carleton University
Ottawa, Ontario

Appendix B

GENERAL INFORMATION

Please give your answer to each of the following questions by placing a check mark next to the appropriate answer [✓]. Please answer all of the questions.

Date: _____

1. Sex: Male [] Female []

2. Age: _____ Years

3.a. How many years of school have you completed?

- 1[] No school
- 2[] 1 to 5 years
- 3[] 6 to 8 years
- 4[] 9 to 11 years (some high school)
- 5[] 12 years (high school graduate or GED)
- 6[] 13 to 15 years (some college or technical school)
- 7[] 16 years (college graduate)
- 8[] 17 to 22 years (post graduate)
- 9[] Over 22 years

b. What degrees do you if any?

Specify type:

- 1[] Bachelor's
- 2[] Master's degree
- 3[] Doctoral degree
- 4[] Other degree:

4 a. Are you employed now?

- 1[] Yes - Full time
- 2[] Yes - Part time
- 3[] No - unemployed
- 4[] No - on disability/sickness leave

4b. What is your current occupation?

- 1[] Professional specialty (eg., teacher, nurse, doctor, lawyer)
- 2[] Executive, administrative or managerial
- 3[] Technician or related support
- 4[] Sales-related

- 5[☐] Government related occupation, including clerical
- 6[☐] Private household service
- 7[☐] Protective service occupation (eg., police, fire)
- 8[☐] Service occupation, except protective or household
- 9[☐] Farming, forestry or fishing-related
- 10[☐] Precision production, craft, or repair related
- 11[☐] Construction-related
- 12[☐] Machine operator, assembler, or inspector (eg., factory-worker)
- 13[☐] Transportation or material-moving occupation (bus/ truck driver)
- 14[☐] Handler, equipment cleaner, helper, or labourer
- 15[☐] Military
- 16[☐] Student
- 17[☐] Homemaker
- 18[☐] Vocational rehabilitation or job training
- 19[☐] Retired
- 20[☐] Disabled
- 21[☐] Other _____

5. What is your total household annual income?

- 1 [☐] less than \$10,000
- 2 [☐] \$11,000 - \$20,000
- 3 [☐] \$21,000 - \$30,000
- 4 [☐] \$31,000 - \$50,000
- 5 [☐] \$51,000 - \$70,000
- 6 [☐] \$71,000 - \$90,000
- 7 [☐] greater than \$90,000

6. What is your marital status now?

- 1[☐] Married
- 2[☐] Never married
- 3[☐] Live with spouse equivalent
- 4[☐] Divorced/separated
- 5[☐] Widowed

7. What is the ethnic/racial group that you most identify with?
(For example: Caucasian, French Canadian, Italian, etc.)

ethnic/racial background : _____

HAQ

Please answer the following questions by circling the number that best reflects how often you engage in the types of behaviours mentioned. Your answer can range from 1 if the answer is not at all, to 5 if you almost always try to do these things.

For example if the question was "Do you try to avoid foods that have high cholesterol", and you felt that you did so only rarely your response would be:

1 2 3 4 5

1	2	3	4	5
not at all	rarely	sometimes	very often	almost always

1.	Do you try to watch the nutritional value of your food?	1	2	3	4	5
2.	Do you change your diet to fit your state of health?
(for example having more liquids when you have the flu)	1	2	3	4	5
3.	Do you try to avoid food that contains additives and preservatives?	1	2	3	4	5
4.	Do you shop in health food shops?	1	2	3	4	5
5.	Do you avoid foods that contain caffeine, such as coffee?	1	2	3	4	5
6.	Do you exclude red meat from your diet?	1	2	3	4	5
7.	Do you exercise?	1	2	3	4	5
8.	Do you avoid taking prescription drugs?	1	2	3	4	5
9.	Do you drink alcohol?	1	2	3	4	5
10.	Do you use recreational drugs?	1	2	3	4	5

DSQ

The following questions deal with the different types of experiences that people can have with their **medical doctors**. Please indicate how often you feel each statement is true for you by circling one of the numbers next to the question. Your answers can range from 1 if you feel that the statement almost never applies to you, to 4 if you almost always feel that the statement applies to you.

For example if the statement was "My doctor is pleasant and polite", and you felt that this was very often true, then your response would be: 1 2 3 4

1 = almost never 2 = sometimes 3 = very often 4 = almost always

1. I believe that doctors can help their patients feel better. 1 2 3 4
2. I feel that my doctor's treatment is effective. 1 2 3 4
3. My doctor listens to what I have to say. 1 2 3 4
4. My doctor takes the time to explain my medical problem thoroughly. 1 2 3 4
5. Overall, I am satisfied by the medical care I receive from my doctor. 1 2 3 4
6. I believe that my doctor is concerned with my well-being. 1 2 3 4
7. My doctor explains what I can expect regarding treatment. 1 2 3 4

Are there any other comments you would like to make about your experiences with your medical doctor? YES NO

If YES: _____

MELC

The next set of statements are about the different ways people can feel about their health. Please read each statement carefully and indicate how much you agree or disagree with each one by circling a number from 1 to 6 according to the following scale:

1	2	3	4	5	6
STRONGLY DISAGREE		MILDLY DISAGREE	MILDLY AGREE	AGREE	STRONGLY AGREE

Please note: Health professional can refer to either your medical doctor (MD), or a complementary health practitioner (CP). For the questions that use the term health professional, circle your response for the health professional that you most frequently use.

For example, if the statement was "Health professionals keep me healthy" and you see a medical doctor most often and agreed with the statement, your response would be as follows:

(MD) CP 1 2 3 4 (5) 6

- If I get sick, it is my own behaviour which determines how soon I get well again.
1 2 3 4 5 6
- No matter what I do, if I am going to get sick, I will get sick.
1 2 3 4 5 6
- Having regular contact with my health professional is the best way for me to avoid illness.
MD CP 1 2 3 4 5 6
- Most things that affect my health happen to me by accident.
1 2 3 4 5 6
- Whenever I don't feel well, I should consult a health professional.
MD CP 1 2 3 4 5 6

6. I am in control of my health. 1 2 3 4 5 6
7. My family has a lot to do with my becoming sick or staying healthy. 1 2 3 4 5 6
8. When I am sick I am to blame. 1 2 3 4 5 6
9. Luck plays a big part in determining how soon I will recover from an illness. 1 2 3 4 5 6
10. Health professionals control my health. MD CP 1 2 3 4 5 6
11. My good health is largely a matter of good fortune. 1 2 3 4 5 6
12. The main thing which affects my health is what I myself do. 1 2 3 4 5 6
13. If I take care of myself, I can avoid illness. 1 2 3 4 5 6
14. When I recover from an illness, it's usually because other people (for example, health professionals, family, friends) have been taking good care of me. 1 2 3 4 5 6
15. No matter what I do, I'm likely to get sick. 1 2 3 4 5 6
16. If it's meant to be, I will stay healthy. 1 2 3 4 5 6
17. If I take the right actions, I can stay healthy. 1 2 3 4 5 6
18. Regarding my health, I can only do what my health professional tells me to do. MD CP 1 2 3 4 5 6

1	2	3	4	5	6
STRONGLY DISAGREE	DISAGREE	MILDLY DISAGREE	MILDLY AGREE	AGREE	STRONGLY AGREE

Use of Complementary Therapies

Please give your answers to the following questions about your use of complementary therapies by **circling** the appropriate answer that appears to the right of each type of therapy. Answer for each therapy even if you have never tried it.

1. Have you ever tried any of the following complementary therapies?:

Chiropractic:	Yes	No
Homeopathy/Naturopathy	Yes	No
Acupuncture	Yes	No
Massage Therapy	Yes	No
Other (please specify all) _____	Yes	No
_____	Yes	No

(For example: Reiki, Aroma Therapy,
Iridology, Reflexology, Herbalism, Biofeedback, etc.)

2. How many times in the last 3 months, in other words since the winter flu season began, have you used any of these complementary therapies?

Chiropractic:	not at all	once or twice	a few times (3-5 times)	a lot (more than 5 times)
Homeopathy/Naturopathy	not at all	once or twice	a few times (3-5 times)	a lot (more than 5 times)
Acupuncture	not at all	once or twice	a few times (3-5 times)	a lot (more than 5 times)
Massage Therapy	not at all	once or twice	a few times (3-5 times)	a lot (more than 5 times)
Other please specify all _____	not at all	once or twice	a few times (3-5 times)	a lot (more than 5 times)
_____	not at all	once or twice	a few times (3-5 times)	a lot (more than 5 times)

(For example: Reiki, Aroma Therapy,
Iridology, Reflexology, Herbalism, Biofeedback, etc.)

3. How many times in the last year, i.e. since last Fall/Winter, have you used any of these complementary therapies?

Chiropractic:	not at all	once or twice	a few times (3-5 times)	a lot (more than 5 times)
Homeopathy/Naturopathy	not at all	once or twice	a few times (3-5 times)	a lot (more than 5 times)
Acupuncture	not at all	once or twice	a few times (3-5 times)	a lot (more than 5 times)
Massage Therapy	not at all	once or twice	a few times (3-5 times)	a lot (more than 5 times)
Other (please specify all)				
_____	not at all	once or twice	a few times (3-5 times)	a lot (more than 5 times)
_____	not at all	once or twice	a few times (3-5 times)	a lot (more than 5 times)

(For example: Reiki, Aroma Therapy, Iridology, Reflexology, Herbalism, Biofeedback, etc.)

Which of the following best applies to you. Please circle.

1. With regards to using any complementary therapies
 - (a) I am not interested in trying any of the complementary therapies for my health problems
 - (b) I might try using a complementary therapy if someone I trusted had a good experience with it and recommended it to me
 - (c) I would try using one or more of them if there were no additional costs involved
 - (d) I would try using one or more of them if they were more accessible to me (i.e. if I didn't have to travel so far to get to them)
 - (e) I would try using one or more of them if I had more information or knew more about the different complementary therapies and how they work
 - (f) I have used at least one complementary therapy and I will probably try some others in the future
 - (g) I have used at least one complementary therapy in the past and I will probably not use any complementary therapy again
 - (h) Other - please specify: _____

Brief Medical History

For each of the following illnesses and physical problems, please indicate which ones you can remember both experiencing and seeking treatment for since last Fall/Winter by circling "YES" if you have experienced it and "NO" if you have not.

For those illnesses/physical problems that you have experienced in the last year, or are currently experiencing, that is those you answered YES to, please indicate which type of treatment(s) you are using to deal with this problem.

Circle either **OM** for orthodox medicine - i.e. treatments from a medical doctor,
CT for complementary medicine/therapies - i.e. practitioners of chiropractic, massage, homeopathy, etc.,
BOTH, if you have used both types of treatment for the problem,
 or **NONE** if you did not seek either of these types of treatment for the problem.

For example if you experienced Allergies in the past year, and only saw a medical doctor for treatment your answer would appear as follows:

Allergies &/or skin problems (YES) NO If YES, then (OM) CT BOTH NONE
 (eczema, rashes, etc.)

<u>List of physical problems</u>	<u>Illness/problem experienced</u>		<u>If YES, then circle one</u>	<u>If YES circle type of treatment used</u>			
Back problems, sprains or muscle strains	YES	NO	If YES, then circle one	OM	CT	BOTH	NONE
Headache/migraine	YES	NO	If YES, then circle one	OM	CT	BOTH	NONE
Angina/heart problems &/or high blood pressure	YES	NO	If YES, then circle one	OM	CT	BOTH	NONE
Digestive problems (constipation, heartburn, etc.)	YES	NO	If YES, then circle one	OM	CT	BOTH	NONE
Cancer	YES	NO	If YES, then circle one	OM	CT	BOTH	NONE

<u>List of physical problems</u>	<u>Illness/problem experienced</u>			<u>If YES circle type of treatment used</u>			
Respiratory problems (Asthma, etc.,)	YES	NO	If YES, then circle one	OM	CT	BOTH	NONE
Allergies &/or skin problems (eczema, rashes, etc.)	YES	NO	If YES, then circle one	OM	CT	BOTH	NONE
Diabetes	YES	NO	If YES, then circle one	OM	CT	BOTH	NONE
Insomnia	YES	NO	If YES, then circle one	OM	CT	BOTH	NONE
Arthritis	YES	NO	If YES, then circle one	OM	CT	BOTH	NONE
Chronic pain	YES	NO	If YES, then circle one	OM	CT	BOTH	NONE
Flu, cold or fever	YES	NO	If YES, then circle one	OM	CT	BOTH	NONE
Other _____ (Please specify - e.g. chronic fatigue, reproductive problems, environmental sensitivities, etc.)	YES	NO	If YES, then circle one	OM	CT	BOTH	NONE

How long have you been experiencing your current health problem(s) ? _____

How long have you been seeking treatment for your current health problem(s) ? _____

If you use complementary therapy answer the following questions:

Please circle the answer that best describes your main reason for using complementary therapy.

I use complementary medicine/therapy because

- (a) Orthodox medicine was not effective for my health problem
- (b) I believe that complementary medicine/therapy allows me to take a more active part in maintaining my health
- (c) The orthodox treatment I received had unpleasant side effects
- (d) I value the emphasis on treating the whole person
- (f) I had difficulty communicating with my medical doctor
(e.g. he/she didn't understand my problem, didn't listen, etc.)
- (e) I am desperate to solve my health problem and I will try anything

Please circle your answer to the following questions:

I use complementary therapy to treat my health problems

- a) instead of orthodox medicine
- b) in addition to orthodox medicine

About how long have you been using complementary therapy?

less than 6 months 6 months to 1 year 1 to 2 years 3 to 5 years more than
5 years

other: _____

NEM

On this page you will find a series of statements a person might use to describe her/his attitudes, opinions and other characteristics. Read the statement and decide which choice best describes you **most of the time**, and is **typically** true for you. Then indicate your answer to each statement by circling the (T) if that statement is typically true for you, or the (F) if you feel that the statement is not true for you most of the time.

Please answer every statement, even if you are not completely sure which answer best describes you. Read each statement carefully but don't spend too much time deciding on the answer.

ANSWER
HERE

T	F	1.	I often find myself worrying about something.
T	F	2.	My feelings are hurt rather easily.
T	F	3.	Often I get irritated at little annoyances.
T	F	4.	I suffer from nervousness.
T	F	5.	My mood often goes up and down.
T	F	6.	I sometimes feel "just miserable" for no good reason.
T	F	7.	Occasionally I experience strong emotions – anxiety, anger – without really knowing what causes them.
T	F	8.	I am easily startled by things that happen unexpectedly.
T	F	9.	I sometimes get myself into a state of tension and turmoil as I think of the day's events.
T	F	10.	Minor setbacks sometimes irritate me too much.
T	F	11.	I often lose sleep over my worries.
T	F	12.	There are days when I'm on edge all of the time.
T	F	13.	I am too sensitive for my own good.
T	F	14.	I sometimes change from happy to sad, or vice versa, without good reason.

OCEAN

For each of the descriptions below decide which end of the scale better **generally** describes you and circle the corresponding number. For instance if you consider yourself to be somewhat "secure, hardy, and generally relaxed even under stressful conditions" you would probably mark 7 or 8 for the first choice, while if you find yourself extremely "sensitive, emotional, and prone to experience feelings that are upsetting", you would probably circle 0 or 1 on the first scale. Circling 5 would mean that you are somewhere in between the two and neither statement is really characteristic of you.

On the whole, I feel I am: (circle one number on each line)

0	1	2	3	4	5	6	7	8	9	10
sensitive, emotional and prone to experience feelings that that are upsetting							secure, hardy and generally relaxed even under stressful conditions			

0	1	2	3	4	5	6	7	8	9	10
extraverted, outgoing, active and high spirited. You prefer to be around people most of the time							introverted, reserved, and serious. You prefer to be alone or with a few close friends			

0	1	2	3	4	5	6	7	8	9	10
Open to new experiences You have broad interests and are very imaginative							down to earth, practical, traditional, and pretty much set in your ways			

0	1	2	3	4	5	6	7	8	9	10
compassionate, good natured and eager to avoid conflict							hard-headed, sceptical, proud and competitive. You tend to express your anger directly			

0	1	2	3	4	5	6	7	8	9	10
conscientious and well organized. You have high standards and always strive to achieve your goals							easygoing, not very well organized and sometimes careless. You prefer not to make plans.			

Appendix C

Original grouping criteria

OM clients: Participants who have not visited a CM practitioner or tried a CM therapy within the last year will form the OM client group.

NCM clients: Individuals who have had five or fewer visits to any CM practitioner have been using CM for less than 3 months will be selected for the new CM client group.

ECM clients: CM clients who have had more than 5 visits to a CM practitioner and have been using CM therapies or seeking CM treatments for one year or more will be selected for the established CM client group.

Reasons for complementary medicine use endorsed by CM clients

Main reason for using CM	Client Group	
	NCM	ECM
	<u>endorsed</u>	<u>endorsed</u>
	% (freq.)	% (freq.)
OM was not effective for my health problem	44.3 (31)	39.4 (28)
CM allows me to take a more active part in maintaining my health	48.6 (34)	54.9 (39)
OM had unpleasant side effects	7.1 (5)	11.3 (8)
I value the emphasis on treating the whole person	30.0 (21)	43.7 (31)
I had difficulty communicating with my doctor	8.6 (6)	5.6 (4)
I am desperate to solve my health problem and will try anything	8.6 (6)	11.3 (8)

CM - complementary medicine

OM - orthodox medicine

NCM - new complementary medicine client

ECM - established complementary medicine client

Appendix E

Types of complementary therapies tried by the different client groups.

Type of CM	Client Group						χ^2	p
	OM		NCM		ECM			
	n = 58		n = 70		n = 71			
	%	(freq.)	%	(freq.)	%	(freq.)		
Chiropractic	32.8	(19)	62.9	(44)	91.5	(65)	48.18	.000
Homeopathy/Naturopathy	8.6	(5)	44.3	(31)	66.2	(47)	43.82	.000
Acupuncture	8.6	(5)	35.7	(25)	47.9	(34)	23.18	.000
Massage therapy	13.8	(8)	51.7	(40)	83.1	(59)	62.18	.000
Other CMs	1.7	(1)	31.4	(22)	49.3	(35)	—	—

OM - orthodox medicine user

CM - complementary medicine/therapy

NCM - new complementary medicine user

ECM - established complementary medicine user

Note: Chi-square tests are for 2 degrees of freedom and N = 199.

Where chi-square values are not given test was not performed due to cell frequencies less than 5.

Other complementary therapies tried by participants

<u>Therapy</u>	<u>n</u>
Reiki	22
Reflexology	16
Aromatherapy	14
Herbalism	14
Iridology	11
Biofeedback	7
Cranial-Sacral therapy	2
Accupressure	2
Alexander Technique	1
Elimination diet	1
Hydrotherapy	1
Therapeutic touch	1
Traditional Chinese medicine	1
Nutritional therapy	1

Appendix F

Other types of health problems reported by participants

<u>Medical problem</u>	<u>n</u>
Depression/Dysthymia	7
Chronic fatigue	5
Fatigue	4
Environmental sensitivities	4
Reproductive/gynaecological	4
Bipolar disorder	2
Stress	2
Pregnancy	2
Fibromyalgia	2
Osteoporosis	2
Infection	1
Check-up	1
Nervous breakdown	1
Broken bones	1
High cholesterol	1
Multiple sclerosis	1
Tendonitis/bursitis	1
Pre-menstrual syndrome	1
Addison's disease	1
Sinitus	1
Tempomandibular joint syndrome	1
Infertility	1
AIDS	1
Hypoglycaemia	1

Appendix G

Examples of comments made about experiences with medical doctorsOM clients

- positive:
1. "Always careful to ensure that I fully understand what is going on"
 2. "My family doctor is wonderful and has dealt with me for almost 20 years. He always makes me understand my problems. I even come to him to help explain my confusion with my specialist."
- negative:
1. "My M.D. has never asked me if I work outside the home, what type of work I do, how many children I have, do they live at home, etc. Has never asked about the whole picture."
 2. "I have seen various doctors including specialists. Some specialists seem to operate their offices like conveyor belts and take little time to explain. Many of the questions and concerns must be common. Why don't they have a series of handouts/pamphlets and give you the relevant ones to take home."
- neutral:
1. "Doctors should explain the side effects of all drugs"
 2. "Just that the majority of doctors care, others don't seem to care."

NCM clients

- positive:
1. "She takes a holistic approach and will prescribe herbal remedies."
 2. "My doctor has always taken my concerns seriously and has repeatedly gone out of his way to help me and my family."
- negative:
1. "He always pushes prescriptions without testing if the cause of the problem is viral or bacterial, always treating the symptoms. He is particularly aggressive in pushing hormone treatment and threatening of the consequences if not taken."
 2. "He is too hurried and sometimes aloof."
- neutral:
1. "I have just changed doctors recently and there is a great difference in doctors in this area. I find that you really have to search to find a good one and I have."
 2. "I would love it if she had more nutritional advice."

ECM clients

positive: 1. "Very able. Sent me to emergency 3 years ago - probably saved my life. M.D. referred me to chiropractic and registered massage therapist, recommends echinacea, etc. "

2. Very considerate and comprehensive, open minded to alternatives. Current in terms of knowledge. Excellent listener and sense of humour.

negative: 1. " I do not feel understood and respected as the owner/operator of my body. My doctor has no time for my intuitive knowledge about my own treatment."

2. " M.D.s are brainwashed to believe that only they have the answers to health problems - their focus is pharmaceutical management and suppression of symptoms."

neutral: 1. "Brilliant. Does not listen well. Does not organize her time well. Despite all this a great doctor."

2. "Some doctors take the time to listen and explain their diagnosis, although some others do not take any time at all to listen and try to find a solution."

IMAGE EVALUATION TEST TARGET (QA-3)

APPLIED IMAGE, Inc
1653 East Main Street
Rochester, NY 14609 USA
Phone: 716/482-0300
Fax: 716/288-5989

© 1993, Applied Image, Inc., All Rights Reserved