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

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## Abstract

The current study was concerned with factors associated with the use of complementary medicine (CM). The reasons for CM use were examined by dividing complementary medicine clients into two groups based on the frequency and length of their use of complementary therapies, and comparing them with conventional medicine clients as well as to each other. New/infrequent CM clients ( $n = 70$ ), established CM clients ( $n = 71$ ), and orthodox medicine clients ( $n = 58$ ) were distinguished on the basis of health beliefs, socio-demographic, medical, and personality variables. Different patterns of predictors of CM use emerged depending on which client groups were compared. In general, health-aware behaviors and dissatisfaction with conventional medicine were the best predictors of overall and initial/ infrequent CM use, and more frequent health-aware behaviors were associated with continued CM use. Medical need also influenced the choice to use CM, and was the best predictor of committed CM use, with the established CM clients reporting more health problems than the new/infrequent CM group. Overall, income was a significant discriminator, but did not predict initial or continued CM use. Openness to new experience was associated with CM use in general, but was most notable in the decision to initially try or explore using CM. The findings support the utility of the three components (predisposing, enabling, and need factors) of the socio-behavioral model for explaining why some people choose CM. Overall, the results of the current study suggest that CM clients need to be looked at in more sophisticated ways, rather than being treated simply as a homogenous group with similar beliefs, motivations and needs.

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

## Introduction

When an individual chooses to seek help for a health issue, 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. Use of alternatives to OM has steadily increased over the past decade with reported use in the U.S. rising from 34% in 1990 (Eisenberg et al., 1993) to 42% in 1997 (Eisenberg et al., 1998). Furthermore, sixty-five percent of Canadian physicians perceive a demand for alternative medicine from their clients (Verhoef & Sutherland, 1995), and a recent Canadian study of rheumatic disease patients found that 60% had used some form of non-conventional therapy (Ramos-Remus, Watters, Dyke, & Suarez-Almazor, 1999).

Despite the increased interest in alternative medicine, the reasons for its increased use are not well understood. Research in Europe, the United States, Australia, and Canada has suggested a variety of demographic and health belief variables that may be associated with non-conventional medicine use. However, the findings have often been inconsistent. Moreover, the conclusions regarding the motivations of complementary medicine clients have been arrived at by comparing OM clients with an undifferentiated sample of CM clients, and have therefore assumed that the reasons that people initially turn to CM are the same reasons why people continue to use CM. The purpose of the current study is to replicate, clarify and extend the findings of the research to date on the health beliefs and motivations of people who use CM, and to explore the possible different motivations and reasons for CM use of new and established CM clients.

## Complementary medicine and health beliefs

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; Druss & Rosenheck, 1999; Murray & Shepherd, 1993; Thomas, Carr, Westlake, & Williams, 1991). Some of the more frequently used provider based 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, reflexology, iridology, and Reiki (Furnham & Forey, 1994). One element that many of these diverse practices share is that they emphasize that the treatment of illness should consider the whole person rather than just the specific health problem. Indeed, Astin (1998) found that having a holistic health philosophy predicted CM use. Moreover, preventive health practices such as reducing stress, and changing diet are often encouraged (Furnham & Bhagrath, 1993), which may promote personal autonomy in health-care. Thus, CM clients may choose this type of health-care because of the perceived match between its practices and their own health-related beliefs and values (Furnham & Beard, 1995; Vincent & Furnham, 1996).

#### The Socio-behavioral model and use of complementary medicine

One model that may clarify the relative roles of the belief, socio-demographic, and individual factors that have been proposed as potential predictors of CM use is the socio-behavioral model (Andersen & Newman, 1973). According to this model, an individual's health care use is dependent upon a sequence of conditions which each contribute to the health-care decisions. These individual determinants are: 1) predisposition to use health services (e.g., beliefs, demographic, and social variables); 2) ability to secure health services (e.g., income); and 3) illness level. Within this framework the predisposing variables such as health beliefs are considered to indirectly influence health care use, whereas illness level reflects the most immediate cause of health service use (Andersen & Newman, 1973).

#### Health beliefs as predisposing factors of CM use

Patient satisfaction, or the degree to which the client is satisfied both with the services provided (treatment efficacy) and with the provider's conduct (doctor-patient relations)(Hsieh & Kagle, 1991), has been studied extensively as a possible motivation for trying CM. Several studies have found that CM clients were more dissatisfied with OM for a variety of doctor-patient interaction reasons including communication difficulties and a perceived lack of concern for their well-being (Furnham & Bhagrath, 1993; Furnham & Kirkcaldy, 1996; Furnham & Smith, 1988; Vincent & Furnham, 1996). Furthermore, CM clients have reported less confidence in the efficacy of orthodox medicine (Furnham & Kirkcaldy, 1996; Gray et al., 1997; McGregor & Peay, 1996; Verhoef, Sutherland, & Brkich, 1990). Only two studies have not confirmed these results, finding instead no differences between the overall satisfaction levels of CM and OM clients (Astin, 1998; Furnham & Forey, 1994).

Because CM may appeal to those with holistic health beliefs (Astin, 1998), health awareness and preventative health behaviors have also been investigated as possible reasons for CM use. Research suggests that CM clients have a greater awareness of preventive health practices such as reducing stress, and getting proper sleep, (Furnham & Kirkcaldy, 1996), and also report more good health habits (Blais, Maiga, & Aboubacar, 1997), and healthier food-related habits than OM clients (Furnham & Bhagrath, 1993; Furnham & Forey, 1994; Furnham & Kirkcaldy, 1996).

However, none of these investigations differentiated CM clients on the basis of length of CM use when comparing them to OM clients. As suggested (Astin, 1998; Furnham & Beard, 1995), the question remains 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, or both effects occur. Thus, it is difficult to tell whether the difference in health awareness and behaviors was a product or a precursor of using CM. Moreover, if the health aware habits

promoted by CM are what initially motivate people to initially try CM, then this health awareness may also be a key motivator for continued use of CM.

Investigations of control beliefs as predictors of CM use are less conclusive. Initial investigations suggested that CM clients believed more in self-control over health (Furnham & Bhagrath, 1993; Kelner & Wellman, 1997), or conversely, less in provider control over health (Furnham & Kirkcaldy, 1996; Furnham & Smith, 1988; Kelner & Wellman, 1997). However, more recent findings suggest that there is no association between the use of CM and control beliefs (Astin, 1998; Ramos-Remus et al., 1999). These inconsistencies may be due to the fact that the health locus of control scale (Lau, 1982) that was used when an association between CM use and control was obtained contained the potentially biasing term “doctor” when assessing provider control over health. Since CM practitioners are also “powerful” others, it is unlikely that many of the CM patients would positively endorse those items if the term doctor rather than health care provider was used. 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.

#### Socio-demographic predisposing and enabling factors

Although health beliefs may play an important role in the decision to use complementary medicine, socio-demographic factors may also influence this decision. CM clients are more likely to be female (Boutin, Buchwald, Robinson, & Collier, 2000; Eisenberg et al., 1998; Kelner & Wellman, 1997; Millar, 1997; Sturm, 2000; Wolsko et al., 2000), and slightly younger than OM clients (Furnham & Bhagrath, 1993; MacLennan, Wilson, & Taylor, 1996; Murray & Shepherd, 1993; Ramos-Remus et al., 1999). Those who use CM also tend to have higher education levels (Astin, 1998; Blais et al., 1997; Eisenberg et al., 1998; Furnham & Forey, 1994; Kelner & Wellman, 1997; Kitai et al., 1998; Sturm, 2000), and higher incomes (Blais et al., 1997; Eisenberg et al., 1998; Furnham & Bhagrath, 1993; Kelner & Wellman, 1997; Millar, 1997) than OM clients.

This latter enabling factor is somewhat expected given the extra costs often associated with CM treatments.

#### Illness profiles and CM use

In accordance with the socio-behavioral model (Andersen & Newman, 1973), it may be an individual's health complaint as much as their health-related beliefs that determines choice of treatment (Furnham & Bhagrath, 1993). Poorer health status has been found to predict CM use (Astin, 1998; Eisenberg et al., 1998; Ramos-Remus et al., 1999; Vincent & Furnham, 1996; Wolsko et al., 2000). Blais, Maiga, and Aboubacar (1997) found that CM clients reported better overall health (fewer incapacities), but more chronic conditions, a finding that is supported by other investigations (Eisenberg et al., 1998; Millar, 1997; Vincent & Furnham, 1996). Additionally, the use of CM was associated with a greater number of physical symptoms and with symptoms of a greater intensity (Burstein, Gelber, Guadagnoli, & Weeks, 1999). Assessing an individual's illness profile is therefore an important part of understanding his or her motivations to use complementary medicine.

#### Beyond the socio-behavioral model : Personality and CM use

Although it may be that clients with a certain personality type will be more inclined to seek out alternative medical care (Verhoef et al., 1990), there has been only limited investigation of this relationship. Research to date suggests that complementary medicine clients consider themselves to be "cultural creatives" (Astin, 1998), more unconventional (McGregor & Peay, 1996), and more likely to take risks than the average person (Sturm, 2000). The five-factor model of personality (Costa & McCrae, 1985a), which features neuroticism, extraversion, openness, agreeableness and conscientiousness, is one of the more commonly used models for assessing the relationship between personality and health behaviors, and provides a good framework for further investigation.



### Aims of the current study

Although research on CM use suggests differences between CM and OM clients in satisfaction with OM, beliefs in control over health, and health awareness behaviors, CM clients have been treated as a uniform group regardless of the duration of their experiences with CM. In order to show that these beliefs are involved in the initial decision to use CM, these differences would be present at or soon after the choice to use CM is made. Therefore, distinctions between newer CM clients and those who have more experience with CM are important for clarifying the role of these beliefs in the choice to use CM, and for investigating whether the beliefs which may lead to CM use are the same as the reasons for continuing to use it.

For the present study newer CM clients were specifically compared to OM clients in order to determine that the hypothesized differences in beliefs and satisfaction which may motivate someone to try CM are present at the start of CM use (or shortly thereafter), rather than possibly developing with increased use of CM. Therefore, it is expected that the newer CM clients will differ from the OM clients in satisfaction with OM, and in health-aware behaviors (e.g., making healthy food choices, exercising, etc.). It is also hypothesized that health-aware behaviors and a belief in personal control over health will be higher in the clients who have been using CM for several years as compared to newer CM clients. It is expected that both CM and OM clients, who are both seeking health care from a powerful other, will not differ in their powerful other health control beliefs after the elimination of potentially biasing terms such as “doctor” from the measure of health locus of control. Finally, this investigation explored other areas that may predict CM use, including socio-demographic variables, personality dimensions, and the health profiles of OM and CM clients.

## Method

### Participants

Participants were recruited by distributing questionnaires at 13 orthodox medicine health offices/clinics and 4 complementary medicine health offices/clinics in Ottawa, Canada, each staffed by one or more general medicine practitioners or CM practitioners. This difference in the number of office type sampled was due to the larger number of OM offices in Ottawa relative to the number of CM offices. 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 (39.2%) refused for various reasons including lack of display space, office policies, and no interest in the study. Offices/clinics were chosen from several areas of the city, including a suburban area, and areas of both high and low affluence from the central region of the city. All offices had a separate waiting room for clients which was staffed by a receptionist.

A total of 396 questionnaires were distributed to the 17 health offices over a period of five months during the winter. Of those questionnaires that were made available to participants through a "Health Services Study" display in the offices' waiting room, 204 (51.5%) were completed and returned. As participation was based on self-selection, it is difficult to estimate the exact refusal rates, except by assessing questionnaires displayed versus those completed and returned. Individual office response rates ranged from 24 to 85% of the questionnaires that were made available via the display being completed and returned. Seventy-one percent (141) of the completed questionnaires were obtained through OM offices which is in line with the fact that 76.5% of the total offices sampled were OM offices. Similarly, 29% (62) of the questionnaires were obtained from CM offices, which comprised 23.5% of the total offices sampled.

A total of 199 participants were included in the study. Although 204 completed questionnaires were returned, 4 of these were not included due to excessive missing data, and one other participant was excluded because she was under the age of legal consent. Participants were classified into client groups based on their use of different health services, not according to the type of office from which they were sampled. The orthodox medicine (OM, n = 58) group included individuals who had not used CM regularly in the last year or in the past. 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 (>3 times per year/per therapy, and with > 1 therapy), met criteria for the established CM client group (ECM, n = 71). Complementary medicine clients who had used CM for a year or less were classified as new CM clients (NCM, n = 25). A fourth client group, infrequent CM clients (ICM) was comprised of 2 subgroups: those who had used CM for 1-2 years (n = 24), and clients who had used CM infrequently (< 5 times per year for all CM therapies combined) for 3 to 5 years (n = 21).

Since infrequent use suggests that the individual will not have had as much experience with CM, and also may not be as committed to CM as a regular means of dealing with health-care, it was hypothesized that the beliefs and motivations of the ICM group would be similar to those of the new CM clients. Therefore, the NCM and ICM client groups were collapsed into one group, new and infrequent CM clients (NICM, n = 70), and a preliminary analyses was run to ensure that there was no significant differences between the 3 subgroups on the main belief variables.

#### Procedure

The questionnaires were made available to potential participants through a display advertising a "health services study" set up in the waiting room of the health offices. This display included a sign giving brief information about the study and participation, a drop box for the questionnaires, and debriefing letters. As participation was on a volunteer, self-selection basis at

the health offices, none of the researchers or the health office staff approached the potential participants regarding taking part in the study. However, the staff was instructed to inform those who asked, that the questionnaire was to be completed at the doctor's office, and not to be taken home for completion. Those who were interested in participating in the study after reading the posted display signs, opened the questionnaire package and read the instructions. These instructions requested them to sign the statement of informed consent, complete the questionnaire in full and deposit the questionnaire in a sealed envelope in the deposit box at the time of their visit. A debriefing letter also made available through the display assured them 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.

#### Materials

Each participant completed a six-page questionnaire 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.

The Multidimensional Health Locus of Control Scale (MHLC) Form A (Wallston, Maides, & Wallston, 1976). This 18 item self report measure contains 3 subscales that assess the degree to which an individual believes in personal over control health (internal health locus of control, IHLC), provider control over health (powerful others external locus of control, PHLC), and chance health outcomes (chance health locus of control, CHLC). Items 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, 1976).

This measure was chosen because it used less biased terms than other instruments of this construct, and the few items that contained the word "doctor" were reworded to "health professional" for the purpose of this study.

Doctor Satisfaction Questionnaire (DSQ). This original measure was developed 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; Jackson, Chamberlain, & Kroenke, 2001). The current measure 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). Items included different dimensions of satisfaction including treatment effectiveness ( e.g., "I feel that my doctor's treatment is effective") and quality of the doctor-patient relationship (e.g. " My doctor listens to what I have to say"), as well as an global rating of satisfaction with the doctor's medical care (" Overall, I am satisfied by the medical care that I receive from my doctor"). Respondents were asked to indicate how often they felt each of the statements about medical doctors was 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 ( $r = .90$ ,  $n=199$ ).

The Health Aware Behaviors Questionnaire (HABQ). This seven-item questionnaire was developed for this study in order to assess the frequency of health-aware behaviors. Six of the ten items were similar to items from the Health Consciousness and General Awareness measure (Furnham & Forey, 1994), and addressed health-aware behaviors such as monitoring intake of preservatives, making healthy food choices, shopping in health food stores, etc. Items covering

other health relevant dimensions such as exercise, and caffeine consumption were also included. The HABQ assesses the extent to which people engage in activities that reflect health awareness, and is rated on a scale from 1 for "not at all" to 5 "almost always". The HABQ had adequate internal consistency ( $r = .73$ ,  $n = 199$ ).

The Negative Emotionality (NEM) scale (Tellegen, 1982). This 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 ( $r = .82$ ,  $n = 872$ ) (Watson & Pennebaker, 1989).

Five Factor Model of Personality [Little, 2000 #49]. Based on the NEO Personality Inventory (Costa & McCrae, 1985a, 1985b), this measure contains five items that assess the personality dimensions of neuroticism, extraversion, openness, agreeableness and conscientiousness and was included to explore the possible relationships between personality and CM use. 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 more valid than their lengthier questionnaire counterparts.

Reasons for using CM. Participants who were currently using CM were asked to endorse any of 6 items regarding their reasons for using CM in order to explore other differences in the reasons for CM use between newer and established CM clients. Reasons for using CM included items such as "I value the emphasis on the whole person" and "Orthodox medicine was not effective for my health problem". These items were based on previous research in Great Britain that investigated 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 from that study were chosen from four of the five factors and rephrased for the current study.

Use of complementary therapies/medicine. Participants were asked to indicate the number and frequency of use of the complementary therapies listed that they had tried (if any). The therapies listed were chiropractic, homeopathy/naturopathy, acupuncture, massage therapy, and other, with a space left to specify any other therapies used. Participants were asked how long they had been using CM for (under 6 months, under 1 year, 1 to 2 years, 3 to five years, or over five years) in order to classify them into the different client groups. An additional question also asked whether they used CM in addition to or instead of orthodox medicine.

Medical history. Questions about the nature of any illnesses or physical problems which the participants were currently experiencing and/or seeking treatment for in the past year were included to assess participants' medical profile. Participants were asked to indicate what type of treatment (OM or CM, both, or none) they had been using for each of the twelve illnesses/physical problems listed in order to explore the relationship between type of illness and treatment type.

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

### Data Analysis

In order to verify that the new CM clients and the infrequent CM clients could be included as one group, new and infrequent CM clients (NICM), possible differences between the groups on the four main health belief variables were assessed using SPSS MANOVA. The three groups did not significantly differ on the set of main subject variables (internal health locus of control, powerful others health locus of control, health aware behaviors, and doctor satisfaction) multivariate  $F(2, 67) = 1.07, p < .39$ . Therefore, all three NCM subgroups were treated as one

group NICM (new and infrequent CM users) in the final analyses. A preliminary analysis was also conducted in order to control for the possible effects of negative emotionality (NEM) on self-reported health. The three client groups (OM, NICM, and ECM) were assessed for differences in NEM with an ANOVA. All three groups reported comparable scores on the NEM,  $F(2, 196) = 0.28, p < .76$ .

For the main analyses, a series of stepwise discriminant function analyses were performed in order to identify the significant predictors of the type of health care use. First, all three client groups were discriminated on the basis of the 10 variables suggested by past research to be associated with CM use: These included 5 socio-demographic variables (gender, age, income, education, and marital status), and 5 subject variables (health aware behaviours, doctor satisfaction, internal health locus of control, external locus of control, and number of medical problems). Next, the NICM clients and the OM clients were discriminated on these 10 variables in order to determine the predictors of CM use. And finally, the NICM and ECM groups were contrasted on the same 10 variables in order to assess if the reasons for CM use are different for those who stay committed to CM use.

Analyses of personality variables was performed using ANOVA to explore any client group differences. A set of planned comparisons between the groups of interest (OM vs. NICM, and NICM vs. ECM) with a reduced significance level of .01 were also conducted. Differences in the health profiles of the 3 groups were assessed by using a chi-square analyses for each health problem to determine which health issues the groups differed on.

## Results

### Demographic characteristics

A total of 199 participants were included in the study, ranging in age from 19 to 80, with an average age of 42 (SD= 13). They included 155 females, 43 males, and 1 transsexual. Of the



199 participants 61% 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%).

### Discriminant analyses

All client groups. Of the 199 cases entered into the analyses 3 were dropped from the discriminant analysis of the 3 client groups due to missing data for one discriminant variable, leaving 196 cases to be processed. Four of the ten variables entered were significant predictors of health care use (criterion for entering was  $p < .05$ ) and formed the first discriminant function which was significant (see Table 2). The predictor that most clearly distinguished all 3 client groups from each other was health aware behaviours. The other predictors in order of significance were, doctor satisfaction, number of medical problems, and income. The remaining six variables - age, sex, education, marital status, internal locus of control, and external locus of control - did not significantly predict health care use and were not entered into the analysis. Incomes, health aware behaviors, dissatisfaction with doctors, and number of medical problems, were highest for the ECM client group and lowest for the OM group. A plot of group centroids on the two derived discriminant functions reveals that that NICM group lies somewhere in between the OM group and the ECM group on the 4 variable significant discriminant function (figure 1).

A discriminant analysis of the OM and NICM clients on the 10 key variables found only 2 significant predictors, health aware behaviours ( $F(1, 125) = 9.41, p = .003$ ), and doctor satisfaction ( $F(1, 124) p < .000$ ). As hypothesised the NICM group were more frequent in their health aware behaviors ( $M = 3.31, SD = .69$ ) than the OM clients ( $M = 2.94, SD = .67$ ), and also were more

dissatisfied with OM ( $M = 3.14$ ,  $SD = .66$ ) than the OM client group ( $M = 3.43$ ,  $SD = .49$ ).

The discriminant analysis of the 2 CM client groups, NICM and ECM, revealed that the best predictor for distinguishing these groups was the number of health problems ( $F(1, 137) = 6.38$ ,  $p = .013$ ), which was higher for the ECM group ( $M = 5.30$ ,  $SD = 2.47$ ) than for the NICM group ( $M = 4.33$ ,  $SD = 2.07$ ). The next and only other predictor was health aware behaviors ( $F(2, 137) = 6.01$ ,  $p = .003$ ) which the ECM clients ( $M = 3.58$ ,  $SD = .72$ ) reported more of than the NICM group ( $M = 3.31$ ,  $SD = .69$ ). None of the other demographic or attitude variables significantly distinguished the two CM client groups.

#### Personality variables

The impact of dispositional characteristics on the motivation to choose complementary medicine was assessed by the scores on the five personality factors of neuroticism, extraversion, openness, agreeableness, and conscientiousness. Only the ANOVA for openness was significant,  $F(2, 195) = 3.79$ ,  $p < .02$ . The contrast of OM clients with new/infrequent CM clients was also significant for the openness dimension,  $t(193) = 2.75$ ,  $p < .007$ , with the new/infrequent 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,  $t(193) = -1.37$ ,  $p < .172$ .

#### Reasons for using CM

Differences in the possible reasons why each CM client group use CM were assessed by chi-square analyses of the endorsement patterns per item between the NICM and ECM groups. Both new CM clients and the established CM clients had similar patterns of responding for all six reasons, with no significant differences between groups per reason. 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 that they had difficulty communicating with their medical doctor (7.1%). New/infrequent CM clients also responded similarly to established CM clients regarding their use of CM to either replace or to supplement OM. The majority of both groups (89.8%) used complementary medicine in addition to orthodox medicine,  $\chi^2(1, 140) = 0.63, p < .73$ .

### Medical profile

Specific health problems were assessed across all three of the client groups in order to determine if the types of illnesses experienced distinguished 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 3). Compared to the NICM and OM clients, a larger proportion of established CM clients reported having headaches, back problems, and chronic pain. The medical profiles of the new/infrequent CM clients and the established CM clients were also compared for differences. The 2 CM groups differed on only 2 health issues, with more ECM clients reporting chronic pain ( $\chi^2(2, 141) = 5.77, p < .016$ ), and cardiovascular problems ( $\chi^2(2, 141) = 3.95, p < .05$ ), than the NICM clients (see table 3).

### Discussion

Overall, the results of this research replicated several of the findings of the previous studies regarding CM clients and why they use complementary medicine. Compared to OM clients, CM clients as a whole had greater health awareness, and reported that they used CM as a complement to OM treatments. Dissatisfaction with medical doctors was also higher in CM clients than the OM clients, confirming earlier results from the British studies (Furnham & Bhagrath, 1993; Furnham & Kirkcaldy, 1996; Furnham & Smith, 1988). This finding 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).

Although other studies have found that CM clients tend to be younger (Furnham & Bhagrath, 1993; Murray & Shepherd, 1993), or older (Furnham & Kirkcaldy, 1996; Kitai et al., 1998) than OM clients, and more likely to be female than OM clients (Furnham & Bhagrath, 1993; Furnham & Kirkcaldy, 1996), these differences were not 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; Kitai et al., 1998). The higher educational level of CM clients may also explain their higher income level relative to OM clients. The CM clients' higher education level may reflect a suggestion that those who choose CM are perhaps better able to understand medical possibilities and make discriminating choices.

Previous investigations into why some people choose CM 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 examined differences between the health beliefs of new CM clients and OM clients to help clarify if indeed these beliefs reflect motivations to use CM.

The hypothesis that health awareness was a contributing factor in the choice to use complementary medicine was supported, with the new CM clients reporting significantly greater health awareness than the OM clients. This result suggests that emphasis on preventative health and healthy living promoted by the various complementary therapies may appeal to and matches the greater concern of individuals who try CM for these lifestyle factors. This difference appears to be independent of education levels, since it remained significant after controlling for the higher

education levels of the CM clients. The majority of new CM clients also indicated that they used CM because they believed that it allowed them to take a more active role in their health. This is consistent with previous research that found that the choice to use CM was related to an attempt to take a more proactive, preventative role in one's health (Boon, Brown, Gavin, Kennard, & Stewart, 1999). The current results may reflect the desire for maintaining their health awareness and the behaviors that accompany it, and mirrors the results obtained by the Health Awareness Questionnaire. Combined, both health awareness and a desire for taking an active role in one's health can be considered important pull factors involved in the motivation to go outside orthodox treatment and try CM.

Consistent with previous findings, the current study demonstrated that the new CM clients were less satisfied with orthodox medicine than the OM clients. This supports the idea that dissatisfaction with OM is also an important motivating variable in the decision to use CM. However, patient satisfaction is affected by several factors including quality of doctor patient communication and efficacy of treatment (Hsieh & Kagle, 1991). Despite the finding that the new 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. The second most reported reason for using CM was because the new CM clients felt that OM was not effective for their health problem. Thus, the dissatisfaction of CM clients, which pushes them to use CM, appears to be more pragmatically based. If OM does not work for treating their health problem, they will seek other treatments such as CM.

Some studies have shown that health status may have some impact on the choice to use

CM, with CM clients in one study reporting more health problems than OM clients (Astin, 1998). However, the new CM clients in this study were similar to OM clients in their number of health complaints. Instead, the established CM clients had significantly more health problems than both these groups, specifically reporting more back problems, headaches and chronic pain than the OM clients. This result is consistent with other findings that CM clients report more chronic problems (Blais et al., 1997) and that individuals who suffered from back problems and chronic pain were more likely to be CM clients (Eisenberg et al., 1993).

The medical profile of the new CM clients tended to place them somewhere in between the 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, although this difference did not reach significance. Although more health problems and chronic conditions may not significantly contribute to the reasons for choosing CM initially, these findings suggest that the chronic health concerns of some CM clients may influence CM clients' continued use of CM.

The current study also investigated the previously unexplored impact of personality on the choice to use CM. Of the five dimensions, the only personality dimension that the OM clients and new CM clients differed on was openness. Costa & McCrae (1985b) 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, Wortman, Vickers, Kusulas, & Hervig, 1994), suggesting that 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.

Finally, differences between new CM clients and established CM clients were

assessed to determine the impact of continued use of complementary medicine on health beliefs. As expected, the established CM clients had significantly greater health awareness than the new CM clients. Although conclusions regarding the impact of CM use on health beliefs are limited by the lack of longitudinal methods to assess this in the current study, this result does tend to imply that experiences with CM over time may strengthen and enhance one's health awareness, perhaps as the CM practitioner 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 suggest a reciprocal relationship 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 may then tend to maintain and strengthen this health awareness.

One other interesting finding was that the established CM clients tended to not be 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 greater 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.

One belief that did not discriminate the three client groups was health locus of control. 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). However, each of these studies used the same

measure for assessing health locus of control, the Health Locus of Control Scale (Lau, 1982) which contains the word "doctor" in six of the seven items in the provider control over health subscale. This likely created a bias in favor of OM clients endorsing them more strongly, and CM clients scoring lower because many CM practitioners are not referred to by this term. 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 on the powerful others LOC, since both client groups seek out powerful others for health care.

However, the lack of differences in a belief of self-control over health among the groups may 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 that 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 & J., 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 in the current study. Consequently, CM clients could be expected to have about the same sense of personal control over health as OM clients (Furnham & Forey, 1994).

Overall, the present 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.

The most obvious selection bias was that the OM clients that decided to participate in this study might have done so because they had more favorable 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 (as the mean scores on the OCEAN tended to indicate). 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.

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.

Although the current study focused on identifying some of the motivations for using complementary medicine, other factors such as onset of certain health problems may impact on the

choice to use CM. Medical problems within the last year were examined, but the onset of those problems in relation to beginning CM use was not examined. 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 based on 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.

The issue of whether or not self reported health behaviors actually translate into healthier lifestyles is a common one in health psychology research. Although the CM clients may be more aware of the health promoting qualities of the habits as listed on the HAQ, 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, 1996), and chronic (Vincent & Furnham, 1996), suggests 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). It has been argued that locus of control is not a motivational variable that shows desire or effort for control (Shapiro, 1996). In addition, the desire for control over one's own choices (Deci & Ryan, 1985), which has been found to be associated with the decision to use CM (Truant & Bottorff, 1999; Yates et al., 1993), may be different from an expectancy for control over outcomes (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 that they can control their health outcomes, especially in the case of chronic problems. 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 behaviors 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 uncover.

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