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Health-Related Self-Perceptions Over Time and Provider–Based Complementary and Alternative Medicine (CAM) Use in People with Inflammatory Bowel Disease or Arthritis

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Summary

Objectives: To prospectively investigate how health-related self-perceptions are associated with use of provider-based CAM in two chronic inflammatory diseases, arthritis and inflammatory bowel disease (IBD).

Design and setting: A prospective online survey was administered to convenience samples of individuals with arthritis or inflammatory bowel disease, and a follow-up survey completed 6 months later. Participants were recruited via online ads, through national organizations, and support groups.

Main outcome measures: Surveys included measures of demographics, use of provider-delivered CAM, disease-related factors, self-perceptions of having a healthy lifestyle and being able to handle stress, and trait resilience.

Results: 325 people (170 with arthritis and 155 with IBD) completed the initial and follow-up surveys. Rates of CAM use were 43.2 % and 45.9% for the arthritis and IBD groups, respectively. T-tests revealed significant differences on healthy lifestyle self-perceptions and trait resilience for both illness groups. Differences in self-perceptions about handling stress were only significant in the IBD group. Multivariate logistic regression controlling for demographics and health-related variables revealed that seeing oneself as having a healthy lifestyle predicted CAM use in both illness groups. Being resilient predicted CAM use only in the IBD group, and self-perceptions about handling stress predicted CAM use only in the arthritis group.

Conclusions: This study provides insights into how health-related self-perceptions are prospectively linked to provider-based CAM use in patients with chronic inflammatory disease. This information is important for both health-care practitioners and researchers as it has

implications for maximizing the health-promoting aspects of CAM use and understanding CAM adherence.

Complementary and alternative medicine (CAM) consists of a broad and diverse set of healing therapies of differing modalities, practices, and health systems[1] which can be classified as falling into one of five distinct categories: Natural product-based therapies, mind-body interventions, manipulative and body-based practices, energy medicine, and whole medical systems[2]. When delivered by a qualified CAM practitioner or teacher, the latter four CAM groups are collectively referred to as mind and body practices[3]. The factors and reasons associated with CAM use, and provider-based CAM use in particular, have been examined extensively by researchers over the past two decades. Aside from socio-demographic and health-status variables, research has highlighted the links between CAM use and beliefs about having a healthy lifestyle, including the practice of positive health behaviours. Several studies have documented that people are drawn to CAM because it is congruent with their beliefs about health[4], and specifically their beliefs in taking a holistic and proactive view of health[5-7]. Consistent with this research, there is a growing body of evidence that CAM users report having healthier lifestyles[8] and engage in a variety of positive health behaviours, including cancer screening[9], getting vaccinations[10], and other preventive health services[11]. National surveys from the U.S.,[8,12] Canada,[13] Germany,[14] and Australia,[15] have noted that CAM use is associated with positive health behaviors, such as a healthy diet and physical activity. There is also evidence that healthy lifestyle changes may result from provider-based CAM use. One longitudinal study found that weekly attendance at a hospital-based CAM wellness clinic resulted in several positive health habit changes including increased exercise, diet changes and stress reduction[16]. Moreover, CAM providers appear to play a key role in promoting the practice of healthy behaviours and engaging in self-care practices that are part of a healthy lifestyle[17-19].

Much of this research has been conducted with general populations rather than specific patient populations despite the consistent finding that CAM use is associated with having a chronic health condition[20]. Yet for people living with a chronic illness, maintaining a healthy lifestyle that includes having a healthy diet, regular exercise, and managing stress has important implications for both immediate and long-term health outcomes. In particular, people who live with a chronic inflammatory illness such as arthritis or inflammatory bowel disease may be especially vulnerable to the negative effects of having an unhealthy lifestyle. Diet and physical activity are important factors for maintaining a healthy weight among people with arthritis[21], and can help people with IBD manage symptoms[22]. Moreover, stress has been implicated in the etiology, maintenance, and exacerbation of inflammatory diseases such as IBD and arthritis[23-26], making stress management an important treatment goal.

Given the known links between CAM use and having a healthy lifestyle it is possible that some people with these chronic inflammatory conditions may choose CAM because it helps them maintain a healthy lifestyle and manage their stress despite their illness. Indeed, a recent meta-analysis found that the perceived fit between CAM and one's self-perceptions, which reflects the symbolic value of CAM, was significantly associated with ongoing CAM use[27]. CAM use is fairly common among people with arthritis[28,29] and IBD[29-31]. However, research on the associations of health-related self-perceptions and CAM use in these patient groups is limited. In one study comparing CAM use among people with arthritis, IBD or other chronic health conditions, CAM use was associated with lower perceived stress and greater perceived control over health in both the IBD and arthritis groups[29]. Other research indicates that CAM use is linked to health beliefs about treating the whole person, taking control over health, and the

negative impact of stress on symptoms in people with IBD [32,33], and holistic health beliefs in people with arthritis[7].

A key question remaining is whether seeing oneself as someone who has a healthy lifestyle and manages stress well is associated with provider-based CAM use among people with IBD or arthritis. This is an important issue for several practical and theoretical reasons. If people with IBD or arthritis use CAM because it fits with their self-image of being a person with a healthy lifestyle or who manages their stress, this information may be useful for physicians when considering which patients may benefit the most from the lifestyle promoting aspects of CAM. This information is also important for CAM practitioners as symbolic motivations are linked to committed CAM use which is posited to be an important indicator of treatment adherence[27]. Conceptually, understanding the extent to which perceptions of having a healthy lifestyle are a product or precursor of provider-based CAM use in these patient populations can also provide insights into the motivations for CAM use as there is some evidence that self-perceptions change in the context of CAM treatment for those with chronic illness[34,35].

The current study examined if provider-based CAM use among people with IBD or arthritis was associated with important health-related self-perceptions: being someone who has a healthy lifestyle and who manages their stress. Provider-based CAM examined in the current study reflected modalities from four of the five National Center for Complementary and Alternative Medicine (NCCAM)[3] categories. In accordance with the classification system from NCCAM [3], natural product-based therapies was not examined. To provide a more stringent test and address the issue of potential change in self-perceptions over time, the posited links between self-perceptions and provider-based CAM use were examined prospectively over a six-month period, with self-perceptions measured initially and CAM use assessed at the follow-up. In

addition to self-perceptions of handing stress, trait resilience was also examined as a potential predictor of provider-based CAM use. The quality of resilience has not been previously examined with respect to CAM. However, research suggests that two components of resilience – able to handle stress[36] and openness to new experiences[5,37] – are correlates of CAM use. Given that resilience is defined as a personality trait that is the composite of these two factors[38], it is possible that this quality may also predict CAM use.

Method

Participants and Procedure

Following clearance from the university research ethics board, two chronic illness samples – people with any form of arthritis, and people with inflammatory bowel disease - were recruited to participate in a study on self-perceptions and adjustment to illness over time. Study notices were placed in the community, on electronic support groups for people with arthritis and IBD, and on the Arthritis Society research web page. The Crohn's and Colitis Foundation of Canada also posted a notice in their newsletter. A dedicated web page for each illness group directed participants to the online survey which was housed on a secure university server. Participants indicated their consent to participate and be contacted six months later for the follow-up study by clicking an "I agree" button on the online consent form. Matching of Time 1 (T1) and Time 2 (T2) responses was accomplished via a 6 character alphanumeric ID generated by the participants at T1 and entered in the T2 survey. All participants were given the option to enter a draw for a certificate to an online bookstore.

Measures

With the exception of certain disease-specific questions, participants completed identical surveys which included questions about demographic information, disease severity and duration,

overall health, self-perceptions, and personality at T1, and questions about CAM use at T2.

Health

Self-reported general health status was assessed with an adapted version of the global health rating item from the Medical Outcomes Survey 36 item short form (SF-36) health questionnaire (Ware & Sherbourne, 1992). Respondents rated their overall health at on a 6-point scale ranging from "Very Poor" to "Excellent" with higher values reflecting better perceived health. This measure provided an extra control for potential differences in self-rated health that may not be due to IBD or arthritis. Participants also reported when they were diagnosed. IBD severity was assessed with the 10-item Bowel Symptoms subscale of the Inflammatory Bowel Disease Questionnaire (Guyatt et al., 1989) which rates the severity and frequency of bowel symptoms within the past 2 weeks on a 7-point Likert scale ranging from 1 (more frequent than before) to 7 (no increase or normal). Scale items were reverse scored and summed with higher values indicating greater symptom severity. The IBDQ showed good internal consistency in the current sample (Cronbach's alpha = .88). Arthritis severity was measured with one question from the Arthritis Impact Measurement Scales 2 [39], for which participants rated their usual pain severity within the past month on a 4-point Likert-type scale ranging from severe to none. Scores were reverse-coded so that higher values reflect higher pain severity.

CAM Use

Participants were asked if they were current users of provider-based CAM, and if so they reported whether they had ever visited any of the CAM providers listed. CAM providers included commonly used modalities from the manipulative and body based practices (chiropractor, massage therapist, reflexologist), energy medicine (acupuncturist, reiki practitioner), and whole medical systems (homeopath, naturopath), as classified by NCCAM [3]

and the Cochrane group CAM classification[2]. Three spaces were also provided for participants to check and list any other provider-based CAM they had used, with examples given (biofeedback, yoga, etc.). They also answered questions about whether they used CAM to supplement or replace conventional medicine, and how long they had been using CAM.

Personality and Self-perceptions

Participants rated how they perceived themselves in relation to other people their age on at T1 and T2. Two self-perceptions (someone who has a healthy lifestyle and someone who is able to handle daily stressors) were rated on a scale from1 (Much less than most) to 10 (much more than most). The T1 and T2 items for each quality were combined into a single self-perception index reflecting ongoing, personality-like self-perceptions.

Resiliency was assessed at T1 with the Ego Resiliency scale[38], a 14-item well-validated scale that assesses stable tendencies to respond flexibility and adaptively to stressful circumstances. Statements were rated on a scale ranging from 1 (does not apply at all) to 4 (applies very strongly) with the mean score reflecting higher resiliency. The scale showed good internal consistency in both the arthritis and the IBD samples, with Cronbach alphas of .87 and .88 respectively.

Data Analyses

Data were first screened and duplicates and surveys that were missing 20 percent or more of the required responses were excluded from the analyses. Respondents were classified as non-CAM users or CAM users, based on 1) whether they considered themselves current CAM users, and 2) their use of provider-based CAM in the previous 6 months.

Differences in education level between the CAM users and non-users in both illness groups were tested as research has found that CAM users tend to have a higher level of

education[29]. *T*-tests were conducted on the health and self-perception variables for each illness group to assess univariate differences between the CAM user and non-user groups and to select the self-perception/personality variables to enter into the regressions. To determine the self-perception and personality factors associated with CAM use in each of the illness samples, a series of step-wise logistic regressions, with CAM user group as the dichotomous dependent variable, were conducted with the significant personality variables entered individually. In all analyses, demographic variables (age, sex, education level) were entered in the first step, health variables (global health, disease duration and severity) entered in the second step, and the predictor variable (personality) in the final step. To assess which of the three personality variables was the strongest indicator of CAM use, a backward step-wise logistic regression was conducted with all personality variables entered in the final step, with a threshold of $p < 0.05$ set for retention and $p > .05$ for removal.

Results

Participant characteristics

A total of 325 people (170 with arthritis and 155 with IBD) completed both on-line surveys. At T1, 427 people with arthritis and 428 people with IBD completed the first survey. However, only 39.8% of the T1 participants from the arthritis group and 36.2% of those from the IBD group returned to complete the follow-up survey. T-tests on the possible differences between the T2 responders and non-responders revealed no significant differences on any of the three self-perception/personality variables or three health status variables in either of the illness groups. Although participants were from a variety of locations around the world, the majority of participants in both illness groups were located in North America. Table 1 presents the complete demographic characteristics of the two illness sample stratified by CAM use group. Among those a self-reported diagnosis of any type of arthritis, rheumatoid arthritis (42.9%), osteoarthritis

(27.6%) were the most frequently reported subtypes, with fibromyalgia (7.1%), ankylosing spondylitis (5.9%), psoriatic arthritis (4.1%) and other subtypes (lupus, gout, and other arthritis types) also included. In the IBD group, 50.6% had Crohn's disease, 42.9% had ulcerative colitis, and 6.5% had indeterminate colitis. The chi-square tests revealed that CAM users had a significantly higher education level compared to non-users in the arthritis group, χ^2 (2) = 7.56, p < .05; however, there was no significant differences between the CAM users and non-users in the IBD group.

CAM use

Overall, 43.2 % of participants with arthritis and 45.9% of those with IBD were current users of provider-based CAM. Figure 1 presents an overview of the types of CAM used, grouped according to CAM category, in each of the illness groups. Provider-based CAM listed as "other" were screened, coded and grouped according to the Cochrane group CAM classification[2]. A *mind-body intervention* category was created which included biofeedback, meditation (from a teacher), and hypnotherapist. The *other manipulative and body-based practices* category included the Alexander technique, craniosacral therapist, and osteopath; the *other energy medicine* category included therapeutic touch; traditional Chinese medicine was the only whole medical systems CAM listed.

Among CAM both illness groups, manipulative and body-based CAM, and massage therapy in particular, was the most commonly used provider delivered CAM category, and mind body interventions was the least used. The majority of people in the arthritis group (89.3%) and the IBD group (81.8%) used CAM as a complement rather than as an alternative to conventional medicine. Most people had been using CAM for more than five years in both the arthritis (47.2%), and the IBD groups (47.7%).

Health variables and self-perceptions associated with CAM use

Correlation analyses to assess the links between education level and self-perceptions revealed that higher education level was significantly associated with the healthy lifestyle self-perceptions (IBD: $r = .21$, $p < .001$; arthritis: $r = .20$, $p < .001$), stress managing self-perceptions (IBD: $r = .15$, $p < .001$; arthritis: $r = .11$, $p < .05$), and trait resilience (IBD: $r = .11$, $p < .05$; arthritis: $r = .21$, $p < .001$), in both illness groups. *T*-tests for both the IBD and the arthritis groups found that there were no significant differences between the CAM user and CAM non-users groups for years since diagnosis, disease severity, and the global health rating (see Table 2). There were, however, significant group differences for nearly all the self-perception and personality variables in both illness groups. As expected, people with IBD who used CAM scored significantly higher on the self-perception indices for being someone with a healthy lifestyle, being able to handle daily stressors, and on trait resilience. Similar results were found in the arthritis group for healthy lifestyle self-perceptions and trait resilience. The self-perceptions of being able to handle daily stressors was marginally significant in the arthritis group ($p = .07$).

In the arthritis group, the logistic regressions for the individual self-perception variables revealed that those who perceived that they were someone with a healthy lifestyle (OR = 1.30, $p < .01$), were someone who handles daily stress (OR = 1.23, $p < .05$), and scored high on trait resilience (OR = 2.03, $p = .05$), were more likely to use CAM. Parallel results were found in the IBD group. Individual logistic regressions found that those who perceived that they were someone with a healthy lifestyle (OR = 1.31, $p < .01$), were someone who handles daily stress (OR = 1.27, $p < .05$), and scored high on trait resilience (OR = 2.55, $p < .01$), were more likely to use CAM.

The adjusted odds ratios and 95% CI for the self-perception variables independently

associated with using provider-based CAM among the both illness groups are presented in Table 3. Among those with arthritis, the backward stepwise regression revealed that people who perceived that they were someone with a healthy lifestyle had higher odds of using CAM. Self-perceptions regarding stress were not, however, a significant predictor of CAM use. The overall regression model accounted for 20 percent of the variance in CAM use. In the IBD group, those who saw themselves as someone with a healthy lifestyle, and who scored higher on trait resilience, had higher odds of using CAM. The overall model explained 18 percent of the variance in CAM use among people with IBD.

Discussion

This is the first study to examine how health-related self-perceptions are prospectively linked to provider-based CAM use in patients with chronic inflammatory disease. The findings were generally in accord with previous research on the links between CAM use and positive health behaviours in the general population, and research on the factors linked to CAM use in arthritis and IBD patients. In both illness groups, individuals who perceived themselves as having a healthy lifestyle initially and six months later were more likely to be current users of provider based-CAM. In addition, individuals with IBD who saw themselves as being able to handle stress were twice as likely to be CAM users, and similarly those with arthritis who scored high on trait resilience had a greater odds of being CAM users. Importantly, these results were found after controlling for important health and demographic variables, including education level, which are known to predict CAM use.

The findings on self-perceptions related to stress extend earlier research on CAM use in people with arthritis and IBD which noted that people with IBD or arthritis that use provider-based CAM score lower on overall perceived stress[29]. In the current study people with IBD or

arthritis who used provider-based CAM perceived themselves as being able to handle daily stressors well and were more resilient. This result is notable especially given the low use of mind-body interventions in the current study as this category of CAM includes yoga, meditation, and other approaches often used for the purpose of stress reduction and relaxation[2]. Cognitive transactional models of stress and coping highlight the role of resources to cope with the stressor[40]. Personality and self-perceptions are internal resources that may help people view situations as being less stressful. From this perspective, stress-related self-perceptions and trait resilience may therefore account in part for the lower perceived stress reported by people with IBD or arthritis who use CAM.

The findings that self-perceptions of having a healthy lifestyle were prospectively linked to ongoing CAM use highlight two important issues. First, it is consistent with models of CAM use that indicate that perceived "fit" between CAM and one's own health beliefs and values can be an important motivator of ongoing and committed CAM use[27,41]. It is possible that people with IBD or arthritis may choose to make provider-based CAM part of their health-care repertoire because they believe that it will help them achieve their goals of maintaining a healthy lifestyle and effectively managing stress. If these beliefs are a precursor of ongoing CAM use then they could also be important patient qualities to be aware of for both conventional and CAM health-care providers as these self-perceptions may be a marker of patients who are willing to try CAM therapies and especially those that promote healthy behaviors. Given the hypothesized links between perceived "fit" with CAM and adherence[27], such self-perceptions could also help identify who may be more likely to adhere to CAM treatment recommendations.

The current findings also highlight the potential role of CAM providers in promoting positive health habits among those living with a chronic illness. For example, qualitative studies have

noted that the patients' relationship with their CAM providers changed their perceptions of health and led to making health behavior changes[42,43]. Other research has also found that 61% of acupuncture clients made lifestyle changes since beginning treatment, and 75% of shiatsu clients reported receiving advice about making healthy lifestyle changes from their therapist and putting it into practice 6 months later[17]. Although in the current study self-perceptions were assessed prospectively and CAM use at the follow-up, the majority of the CAM users had been consulting practitioners for more than 5 years. This tends to support the notion that self-perceptions regarding a healthy lifestyle and stress resilience could be both a product and precursor of CAM use, that over time are reciprocally reinforced[5,34].

Future research could address this issue in several ways. Longitudinal research following new CAM clients over time may help shed light on the development of health-related self-perceptions in the context of CAM treatment. Alternatively, examining how and if these health-related self-perceptions change when there has been a lapse in use of CAM over a period of time may also provide insight into the proposed dynamic interrelationships between provider-based CAM use and health-related self-perceptions. Given the toll of stress and poor health behaviors on the health and well-being of people living with chronic illness and especially inflammatory disease, understanding how CAM can contribute to both the health-related self-perceptions and behaviours is an important goal for health researchers.

Limitations

The results from this study should be considered in light of several limitations. The convenience samples used are a common pitfall of survey research that may introduce sampling bias which can affect the generalizability of the results. Nonetheless, the rates of CAM use found were comparable to those in other studies with arthritis[44] and IBD[30] patients. Participants were

recruited to participate in a study about self-perceptions and adjustment to illness and not CAM use per se, and thus the bias to attract pro-CAM participants was potentially minimized. The response rate for the second survey was low; however in survey research this is not uncommon given the time lapse between the surveys[45]. The current findings are also focused solely on provider-based CAM and therefore may not be relevant for understanding the use of CAM self-care. However, a national survey found that CAM self-care health-beliefs were associated with the use of CAM providers suggesting that the current findings may generalize to self-administered CAM. Finally, the results may be specific to chronic inflammatory conditions and may not generalize to other chronic illness groups or to general medical populations. Research is needed to replicate these findings with other populations.

These limitations aside, the current study has a number of noteworthy strengths. Running the analyses in parallel with arthritis and IBD samples permitted a comparison of how self-perceptions were associated with CAM use in two distinct chronic inflammatory diseases. The prospective analyses also permitted a more stringent test of how health-related variables and self-perceptions were linked to CAM use that has not been previously examined with these illness groups.

Conclusions

The current study indicates that people with arthritis and IBD who perceive themselves to have a healthy lifestyle, handle stress well, and are resilient are more likely to use provider-based CAM. These findings are important for both health-care practitioners and researchers as they have implications for maximizing the health-promoting aspects of CAM use and understanding CAM adherence among people with chronic inflammatory diseases.

Conflict of interest statement

No conflict of interest is reported.

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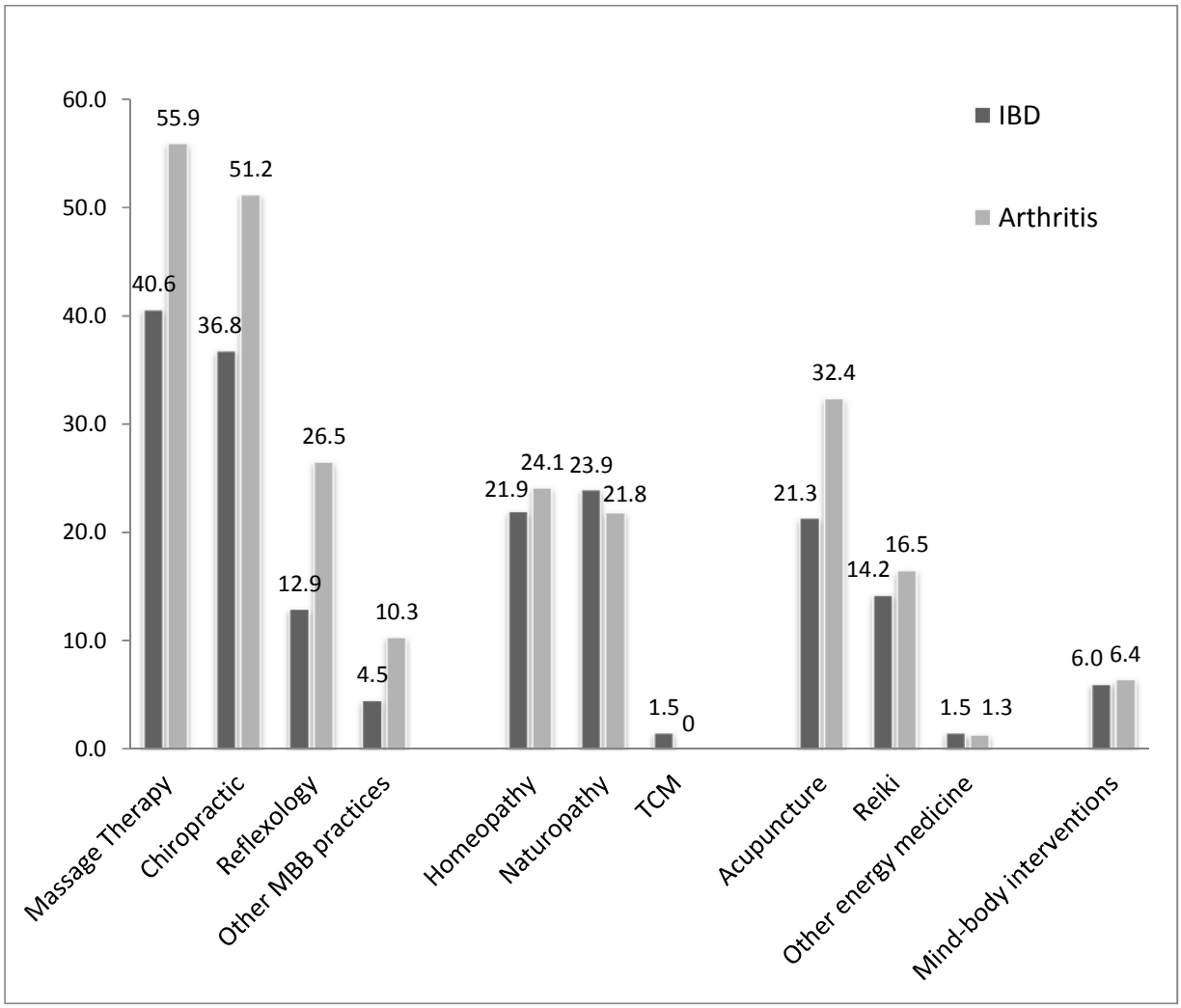

Figure 1: Percent of CAM users who have used each of the different CAM modalities, group by NCCAM category.

Note: MBB = Manipulative and body-based therapies; TCM = traditional Chinese medicine

Table 1. Demographic characteristics of each illness sample stratified by complementary and alternative medicine (CAM) use group.

	Illness group			
	Arthritis (*N* = 170)		IBD (*N* = 155)	
	CAM user	Non-user	CAM user	Non-user
N	78	92	67	88
Sex (% female)	96.1	87.9	83.1	74.7
Age				
Mean (SD)	46.96 (11.5)	46.81 (11.7)	37.80 (12.4)	38.49 (13.4)
Range	24-74	19-72	16-70	16-71
Ethnicity (% Caucasian)	89.7	95.6	88.6	97.7
Country (%)				
Canada	50.0	48.9	48.5	48.9
United States	42.3	45.7	30.3	31.8
United Kingdom	5.1	3.3	15.2	13.6
Australia/New Zealand	1.3	1.1	6.1	3.4
Europe	1.3	1.1	0.0	2.3
Employment status (%)				
Full-time	35.1	36.7	43.8	43.5
Part-time	22.1	20.0	23.4	18.8
Unemployed/retired	15.6	20.0	23.4	27.1
Disabled	27.3	23.3	9.4	10.6
Education (%)				
High school or less	6.4	18.5	10.6	15.9
University or college	66.7	66.3	62.1	68.2
Graduate school	26.9	15.2	27.3	15.9
Relationship status (%)				
Married	51.3	60.9	67.2	67.8
Separated/Divorced/Widowed	21.8	20.7	7.8	8.0
Never married	26.9	18.5	25.0	24.1

Note: IBD = Inflammatory bowel disease; SD = standard deviation;

Table 2. Mean differences between complementary and alternative (CAM) users and non-users in each illness group.

	Illness Group					
	Arthritis (N = 170)			IBD (N = 155)		
	CAM users (n = 78)	Non-users (n = 92)		CAM users (n = 67)	Non-users (n = 88)	
Health variable	Mean (SD)	Mean (SD)	t(168)	Mean (SD)	Mean (SD)	t(153)
Years since diagnosis	12.49 (12.0)	10.53 (8.7)	-1.20	10.26 (10.1)	8.86 (8.2)	-.47
Disease severity[a]	3.10 (.57)	2.98 (.67)	-1.27	4.95 (1.32)	4.85 (1.28)	-.94
Global health rating	3.45 (1.1)	3.43 (.98)	-.09	3.26 (1.2)	3.40 (1.1)	.76
Self-perception variable	Mean (SD)	Mean (SD)	t(168)	Mean (SD)	Mean (SD)	t(153)
Has a healthy lifestyle	6.57 (2.0)	5.67 (1.8)	-3.05**	6.60 (2.1)	5.71 (2.0)	-2.64**
Handles daily stressors	6.79 (1.9)	6.27 (1.9)	-1.81	6.57 (2.0)	5.83 (2.0)	-2.27*
Resilience	3.11 (.47)	2.92 (.53)	-2.37*	3.03 (.55)	2.82 (.56)	-2.26*

Note: IBD = Inflammatory bowel disease; *p < .05, **p < .01; [a] Disease severity was measured on a 4-point scale for arthritis and on a 7-point scale for IBD.

Table 4. Adjusted odds ratios (ORs) and 95% confidence intervals (95% CI) of factors independently associated with use of provider-based CAM. Only the results for the self-perception and personality factors remaining after the conditional backward step-wise removal are listed. Demographic and health variables were force entered on the first and second steps, respectively.

	Illness group					
	Arthritis			IBD		
	OR	95% CI	*p*-value	OR	95% CI	*p*-value
Age	.99	0.96 – 1.02	0.522	1.01	0.98 – 1.04	.577
Sex						
Male	.28	0.07 – 1.14	0.075	.47	0.19 – 1.17	.105
Education						
High school	.30	.08 – 1.14	0.077	.36	0.09 – 1.43	.147
College/University	.72	.30 – 1.74	0.467	.61	0.25 – 1.48	.273
Graduate school	1.0			1.0		
Health						
Years diagnosed	1.03	0.99 – 1.06	0.156	1.01	0.97 – 1.06	.557
Disease severity	1.31	0.71 – 2.43	0.385	1.12	0.85 – 1.66	.322
Global health	.74	0.49 – 1.13	0.166	0.60	0.39 – 0.92	.018
Self-perceptions and personality						
Has a healthy lifestyle	1.29	1.05 – 1.59	0.014	1.24	1.02 – 1.51	.029
Handles daily stressors	1.20	0.97 – 1.49	0.090	---	---	---
Trait resilience	---	---	---	2.09	1.02 – 4.31	.045