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A Descriptive Analysis of an Integrative Medicine Clinic

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ABSTRACT

Objective: To evaluate and describe an integrative medicine clinic including its patients; their presenting problems, medical objectives, treatment recommendations; whether recommendations were recalled and adhered to; and patients' self-reported health outcomes.

Design: A prospective cohort study of 160 new clinic patients were treated using a wide range of integrative medicine therapies. Patients were interviewed at intervals of 1, 3, and 6 months after their initial visit.

Setting: The study was conducted at the Institute for Health and Healing clinic, at California Pacific Medical Center located in San Francisco, CA.

Subjects: The subjects were new clinic patients seeking care for a variety of symptoms and diagnoses.

Intervention: Patients presented with an average of 4.0 symptoms and 2.9 diagnoses; physicians recommended 9.5 "treatments" per patient.

Results: At 6-month follow-up, symptom intensity decreased from 6.5 to 4.2 (on a 10-point scale; $p < 0.005$); and 57% of the patients had made "substantial" progress or had completely achieved their health objectives ($p < 0.005$). The Short Form 12 (SF-12) measure of mental and physical functioning improved significantly from baseline to one month ($p = 0.05$; $p = 0.001$, respectively) and maintained this improvement at 3 ($p = 0.01$; $p = 0.01$) and 6 months ($p = 0.001$; $p = .001$). At 1-month follow-up, patients recalled 57% of the actionable statements from the physician without a prompt and they followed 55% of all recommendations well (90% or above). Over the follow-up period, patients increasingly attributed the reductions in symptoms ($p = 0.01$) and achieving their health objectives ($p = 0.01$) to the treatment plan. Self-reported measures of days ill and days missed at work/school did not differ significantly from the year before coming to the clinic.

Conclusion: The results indicate that patients can recall and follow a complex treatment regimen. Subjective and objective measures of patients' health status improved after one month and this effect was sustained or improved further at 6 months follow-up. Further study is needed to determine whether patients' improvement was the result of the treatment regimen.

INTRODUCTION

The growing use of complementary and alternative (CAM) therapies has prompted efforts to integrate alternative practices into mainstream medicine. One such effort is the creation of integrative medicine clinics that combine conventional with complementary and alternative therapies. It is therefore timely that CAM therapies and the clinics that provide them be evaluated to assess their safety, efficacy, cost effectiveness, and patient satisfaction.

The concept of "clinic," defined as an organized team focused on the diagnosis or management of patients to treat or prevent illness, is a basic unit of medical care worldwide. However, while there are many studies on specific treatments and individual practitioners, there have been few on "clinics," the next order of organization within the medical

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care system (Melchart et al., 1997; Mulgirigama and Illangasekera, 2000; Nevelle-Smith, 1999).

Founding a CAM clinic in a conventional hospital required careful planning by the Institute for Health and Healing (IHH), a program within California Pacific Medical Center (CPMC), a community and teaching hospital in San Francisco, CA. The clinic began operation in January 1998 after 18 months of planning and preparation. The goal of the clinic was to integrate multiple practitioners of various modalities with diverse perspectives. The clinic staff was committed and paid to meet weekly to review: (1) each others' work, (2) their interactions with shared patients, (3) to discuss best practices, and (4) work together to enhance collaboration and problem solving.

Planning was undertaken by a task force, which included hospital administrative leadership, medical staff, and the CPMC Foundation. In addition, an IHH steering committee worked to define the treatment philosophy (Stewart, 2000; Stewart and Faass, 2001), create a calm and supportive healing environment, recruit personnel, establish policies, devise budgets, and market the clinic.

Fifteen (15) months after the clinic opened, the authors evaluated patient satisfaction from 146 patients after they visited with 1 of 4 Health and Healing Clinic (HHC) physicians. The questions were all scaled on a 1 to 5 point scale; a higher number represents greater satisfaction. These results showed a remarkable degree of satisfaction in terms of the patients knowing more about the nature of their problem (4.5), having confidence in their practitioners (4.7), providing adequate plans for follow-up (4.8), for feeling comfortable with interaction with practitioners (4.8), and for whether the advice or treatment was helpful (4.7). There was an overall satisfaction of 4.7, indicating definite satisfaction with the care they received.

While the results of the patients' satisfaction questionnaire were encouraging, the investigators wanted to know whether patients could remember what they were told, whether they applied these recommendations, and whether their health had improved. The investigators expected that answering these questions would help guide the evolving course of the clinic regarding patient care and maintaining financial sustainability.

METHODS

Study design

The design was a prospective, cohort study consisting of consecutive new patients seeking care at the HHC. Data were collected from a standard in-depth intake questionnaire, which was mailed to all new patients to be completed prior to their first visit, and from the patients' medical charts (Table 1). Patients were then interviewed by telephone 1, 3, and 6 months after their first clinic visit. The study was approved by CPMC's Institutional Review Board.

Recruitment and follow-up

Between February 2000 and February 2001, 355 patients come to the clinic for their first visit. While the protocol specified consecutive recruitment of patients, the physicians responsible for recruitment did not consistently invite patients they felt were vulnerable or were sensitive to having their privacy invaded. Occasionally, patients were not asked inadvertently because a study consent form was not included in the medical chart on the patient's first visit. Physicians did not consistently document refusals to participate, but they have indicated that few patients refused to participate. One-hundred and sixty (160) patients agreed to participate in the study. Of these, 23 could not be contacted after the

TABLE 1. MEASURES AND FOLLOW-UP TELEPHONE INTERVIEW SCHEDULE

Measure	*Initial visit*	*1 month*	*3 months*	*6 months*
Demographic characteristics	x			
Diagnoses	x			
Symptoms and severity	x	x	x	x
Medical objectives and progress achieving them	x	x	x	x
Treatment recommendation	x	x	x	x
Life satisfaction	x	x	x	x
Recall treatment recommendation		x		
Adherence to treatment recommendation		x	x	x
Treatment helped resolved symptoms		x	x	x
Treatment helped achieve objectives		x	x	x
Days ill	x	x	x	x
Days missed	x	x	x	x
Practitioner visits	x	x	x	x
Hospital days	x	x	x	x
Mental and physical functionality	x	x	x	x

initial visit and 13 dropped out after the first month follow-up, including 7 patients who expressed dissatisfaction with the treatment outcomes, 5 who gave nonspecific reasons, and 1 patient who died. A total of 113 patients completed at least two of the three interviews and 109 completed the 6-month interview. There were no significant differences or trends in age, gender, education, and initial symptom intensity between patients who completed the 6-month interviews and those who did not.

Clinic, physicians, and therapies

The clinic was staffed by four physicians, three board-certified in internal medicine and one board-certified in pediatrics and infectious diseases. Each patients' initial visit was 1.5 hours, allowing for in-depth history-taking as well as collaborative creation of an integrative medicine treatment plan. Treatment recommendations included: dietary supplements, vitamins, dietary changes, homeopathic remedies, herbs, self-care measures (information gathering, classes, creative arts, exercise, journaling, changing environment), other CAM therapies, such as interactive guided imagery, acupuncture, and massage. Subsequent visits with the physician were usually 30 minutes long. Within the clinic, in addition to the physicians, there was a doctor of Traditional Chinese Medicine (TCM), a CranioSacral therapist, and other massage therapists. Except for limited third-party insurance and a patient assistance fund, all patients paid for services directly at the time of the visit.

IHH network

The clinic supports and is supported by a network of healing resources administered by the IHH (Scherwitz et al., 2003). Physicians may refer patients to IHH sponsored community classes, including yoga, *tai chi*, *qigong*, mindfulness meditation, as well as "standard" psychologic/therapy support groups. They can recommend that patients go to the IHH/Planetree resource center library and/or conventional medical library or the retail store. The retail store ("Healing Store") carries recommended commercially available herbal extracts, homeopathic remedies, vitamins, supplements, books, health related CDs and videotapes, and other health-related equipment, such as yoga mats, meditation bolsters, etc.

Measures and follow-up

The follow-up telephone interviews were conducted by a research associate and students in holistic health trained to do research interviewing. Efforts were made to have the same research assistant for each follow-up contact. The interviewers made at least five attempts (including during evenings and weekends) to reach patients for each follow-up interview. The measures and schedule for data collection are listed in Table 1. The research associate collected initial and follow-up data from the patients' intake form and medical charts based on diagnoses (≤ 5), symptoms (≤ 5), patients' health objectives (≤ 3), and treatment recommendations (≤ 20). Diagnoses were sorted into 12 categories based primarily on organs or organ systems involved with their symptoms and secondarily on behavioral/psychologic categories (e.g., childhood behavioral problems, eating problems, anxiety, and depression). Patients' health objectives were categorized into the 12 diagnostic categories and 4 additional categories that represent patients' written objectives: improved general health and well-being, finding a diagnosis, seeking alternative treatments, and dealing with stress. Categorization was done independently by two research assistants and disagreements were resolved by consulting first and second authors.

Treatment recommendations were updated by chart review whenever the patients returned to the clinic. Each recommendation was initially sorted into one of 47 detailed categories. For more general analyses, the 47 categories were collapsed into the following 5: substances to take, diet changes (add or avoid food items), self-care, referral to another health practitioner, and further diagnostic evaluation.

Recall and adherence measures

Recall and adherence was assessed for each treatment recommendation. Recall was defined as the patient's ability to recall the actionable step in the physicians' recommendation (e.g., take a multivitamin). Recall was operationally defined by the number and specificity of prompts the interviewer had to use to get the patient to recall the physician's recommendations. Each prompt contained a clue. If patients could freely recall what the doctor recommended they got a "1," if patients required a general prompt (e.g., "It was something to take.") it was a "2," if they required a specific prompt (e.g., "It was a vitamin.") it was a "3," and if they could not recall at all it was a "4." Schedule and dosage were not required to score a correct response. Adherence to individual treatment recommendations and overall adherence were categorized into three levels: (1) complete (doing 90%–100% of what was recommended), (2) partial (11%–89%); and (3) not at all (10% or below).

Health status measures

Subjective measures. In keeping with the methodology used previously by Melchart and colleagues (1997), at each follow-up interview, patients were asked to rate the severity of their symptoms on a 10-point scale and to rate how much closer they were to achieving their health objectives on a -10 to $+10$ scale, with 0 indicating status at the initial visit and positive numbers representing patients getting closer to and negative numbers representing patients getting further away from achieving their objectives. At the end of each follow-up interview, patients were asked to rate the de-

gree (on a 5-point scale) to which they thought the treatment regimen helped them to achieve their objectives and to reduce their symptoms.

Objective measures. At each follow-up interview, patients answered the 12 questions from the Medical Outcomes Short Form (SF-12), a well-validated measure of physical and mental functionality, standardized to national norms (Ware et al., 1995). SF-12 responses for mental and physical status were standardized. Also, for the interval between interviews, patients reported the number of: (1) days ill, (2) days they had been out of work/school because of illness, (3) days in the hospital, and (4) number of visits to a health provider.

Analysis and presentation strategy

All analyses utilized SPSS (version Base 11.5; SPSS Inc., Chicago, IL). The results presented in the tables use the mean of all symptoms, objectives, and responses to treatment recommendations. Changes in the health status measures were evaluated over time with *t* tests and one-way repeated analyses of variance (ANOVAs).

RESULTS

Of 160 patients, 40 were children, of whom 33 were younger than 12 years of age (Table 2). The average age of the adults was 43 years, with 8% over 60. The sample was mostly female (68%), a predominance that held in every diagnostic category except childhood behavioral disorder (15/19 male) and eye/ear/nose/throat disorders (18/35 male). Patients were 90% Caucasian, well educated (58% who were old enough had a masters degree or higher), and had high incomes (50% with household income above $80,000).

Patients were referred to the clinic by their physician (24%), family or friend (15%), media or advertising (12%), CPMC employee (12%), another conventional health provider (11%), alternative health care provider (5%), another clinic patient (4%), or other sources (17%).

Presenting problems

The 160 patients presented with a wide range of symptoms and diagnoses. Patients had a mean of 2.0 diagnoses per patient with fatigue (8), depression (6), insomnia (6), and constipation (4) the most frequently mentioned. When these diagnoses and symptoms were grouped by organ system, the systems involved, in order of frequency, were: gastrointestinal (43), psycho/behavioral (43), eye/ear/nose/throat (36), other (33) endocrinologic (27), musculoskeletal (24), skin (22), childhood behavioral (19), neurologic (18), pulmonary (17), eating disorders (15), and fatigue/fibromyalgia (13). Patients had a mean of 3.6 symptoms with an average intensity of 6.6 on a 10-point scale.

Pediatric patients were compared to adult patients on number of diagnoses, symptoms, treatment recommendations, as well as recall, adherence, and the outcome measures. With the exception of adults having slightly more diagnoses (2.1 versus 1.7; *t* test, $p = 0.05$) and symptoms (3.7 versus 3.2; *t* test, $p = 0.02$) pediatric patients did not differ significantly from adults in their symptom severity, number of treatment recommendations, recall, adherence, or any of the outcome measures.

Using an open-ended format, patients were asked to write their objectives for seeking care at the clinic. The most frequent comments were grouped into the following themes: improving general health (48), seeking alternative therapies (26), helping with an eating disorder (24), and improving gastrointestinal problems (21). Many responses were specific to a symptom or diagnostic category such as psycho/behavioral (18), fatigue/fibromyalgia (10), musculoskeletal (10), and neurologic (10).

TABLE 2. DIAGNOSES, SYMPTOMS, SYMPTOM SEVERITY, AND CLINIC VISITS BY AGE AND GENDER

		Diagnoses (#)			*Symptoms (#)*		*Initial symptom Severity (0–10)*		*Visits (#)*	
		N	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Age	Infant	3	2.0	(0.0)	4.3	(0.6)	6.5	(0.4)	3.3	(1.5)
	Ages 1–17	40	1.7	(0.9)	3.2	(1.3)	7.2	(1.8)	3.3	(3.8)
	18–29 yrs	21	2.1	(1.3)	3.9	(1.5)	6.5	(1.9)	3.1	(3.3)
	30–49 yrs	57	2.0	(1.4)	3.7	(1.3)	6.5	(1.8)	3.2	(3.1)
	50–89 yrs	39	2.3	(1.3)	3.7	(1.4)	5.9	(2.2)	4.5	(5.7)
Gender	Female	108	2.1	(1.3)	3.8	(1.3)	6.5	(1.8)	3.5	(4.1)
	Male	52	1.8	(1.0)	3.3	(1.2)	6.7	(2.1)	3.6	(3.9)
Total		160	2.0	(1.2)	3.6	(1.3)	6.6	(1.9)	3.5	(4.0)

# Indicates the average number of diagnoses and symptoms at the initial visit as well as number clinic visits. The symptom severity was based on 1 (no symptoms) to 10 (very intense symptoms).

Clinic visits and treatments

Patients averaged 3.5 visits to the clinic. Thirty-five percent (35%) had only 1 visit during the 6-month follow-up, 22% visited twice, 11% visited three times, 10% visited four times, and 22% visited five or more times. Physicians made an average of 9.5 treatment recommendations per patient (Table 3). The physician using homeopathic remedies recommended the fewest (3.7), while the pediatrician recommended the most (14.2). Fifty percent (50%) of all treatment recommendations were for substances to take: primarily supplements (355), vitamins (155), homeopathic remedies (99), herbs (63), prescribed pharmaceuticals (58), and over-the-counter pharmaceuticals (24). Self-care was the next most frequently recommended category, with meditation (20), creative art (18), exercise (14), journal writing (11), and fun/play (7) the most frequent recommendations. Next in frequency was referral to another practitioner, then dietary changes, and finally further diagnostic evaluation. The distribution of these recommendations is remarkably consistent across age group and gender.

Recall and adherence to treatment recommendations

At the 1-month follow-up interview, patients recalled 57% of their treatment recommendations without a prompt, 20% with a general prompt (e.g., "Did you take something?"), another 18% with a specific prompt (e.g., "Did you take a supplement?") and 6% of recommended treatments could not be recalled at all (Table 4). The best-recalled treatment recommendations were for "child behavioral modification" (78% recalled this recommendation without a prompt), "contemplative meditation" (71%), and the taking of different substances (64%–69%). The least recalled items were "to do creative things" and "to read" (44% and 48% recalled these, respectively, without a prompt).

Patients tended either to adhere well to the treatment recommendations (54.9% of all recommendations), or not all (34.8% of all recommendations) with little partial adherence (10.4% of all recommendations) (Table 5). Adherence varied by type of recommendation. The highest adherence was for homeopathic remedies (75% of recommendations with complete adherence), followed by avoiding specific foods (71% complete adherence). Adherence was generally good (60%–70% complete adherence) for taking substances such as pharmaceuticals and supplements. The poorest adherence level (40%–50% complete adherence) was for recommendations that required relatively more effort (e.g., following a diet that excluded certain groups of foods, going to classes, exercising, or meditating. Adherence to reducing food intake and increasing exercise improved over time from 40%, at 1 month, to 60%, at 6 months. Adherence to treatment recommendations did not differ significantly by age, gender, income, education, primary diagnosis, or symptom intensity (analyses not shown).

Subjective health outcomes

Table 6 lists all heath status measures from the initial visit to the 6-month follow-up. Symptoms at the initial visit were most severe for eating disorders (8.7), gastrointestinal (8.5), and childhood behavioral problems (8.2), and lower for neurologic (6.7), musculoskeletal (6.9), and endocrinological (6.9) diagnoses. Compared to the initial visit, the mean intensity of all symptoms decreased significantly from 6.5 at the initial visit to 4.6 at 1 month follow-up (t (89) 6.2; $p \leq 0.001$) to 4.2 at 6-month follow-up (t = (76) 4.2; $p \leq 0.001$).

Patients reported that they were significantly closer to achieving their health objective at 1 month (4.1) than at the initial visit ($p < 0.01$), and were closer still at 3 (5.1) and 6 months (5.5) than 1 month (Wilks' λ = (3, 67) 0.44, F = 28.1, p = 0.001, η^2 = 0.56).

Patients' reports regarding whether the treatment plan helped them achieve their objectives and reduce their symptoms increased significantly from the first to the 6-month follow-up (F = (1, 67) 4.1, $p < 0.05$; F = (2, 65) 4.9, p = 0.01, respectively).

TABLE 3. PHYSICIAN RECOMMENDATIONS BY AGE AND GENDER

Age and gender	*Total recommendations (#)*			*Substances to take (#)*		*Self-care (#)*		*Referral to other practitioners (#)*		*Diet changes (#)*		*Diagnostic evaluations (#)*	
	n	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Infant	3	5.7	(4.7)	3.3	(2.3)	2.0	—	1.0	(0.0)	1.0	(0.0)	1.0	—
Ages 1–17	40	10.5	(5.6)	5.0	(2.9)	2.5	(1.4)	2.2	(1.1)	2.0	(1.3)	2.0	(1.2)
18–29 yrs	21	8.3	(5.2)	4.2	(2.5)	2.8	(1.8)	2.8	(1.9)	2.0	(1.4)	2.1	(1.3)
30–49 yrs	57	8.9	(6.5)	4.8	(3.4)	2.5	(1.6)	2.8	(1.6)	1.9	(1.5)	2.1	(1.1)
50–89 yrs	39	10.2	(6.2)	5.1	(3.4)	2.8	(1.6)	2.6	(2.0)	2.3	(2.0)	1.8	(1.0)
Female	108	9.2	(6.2)	4.9	(3.2)	2.5	(1.5)	2.7	(1.8)	2.3	(1.8)	1.9	(1.0)
Male	52	9.9	(5.8)	4.7	(3.1)	2.8	(1.6)	2.1	(1.2)	1.6	(0.9)	2.0	(1.3)
Total	160	9.5	6.0	4.8	(3.1)	2.6	(1.6)	2.5	(1.6)	2.0	(1.6)	2.0	(1.1)

SD, standard deviation.

TABLE 4. RECALL OF TREATMENT RECOMMENDATIONS (AT ONE-MONTH FOLLOW-UP)

Type of recommendation	*Number of recommendations*[a]	*Without prompt (%)*	*General prompt (%)*	*Specific prompt (%)*	*Cannot recall (%)*
Substance to take	560	57	20	17	6
Self-care	172	57	20	17	7
Referral to other practitioner	137	58	23	15	5
Diet change	120	53	17	24	7
Diagnostic evaluation	84	60	17	18	5
Total	1073	57	20	18	6

[a]Includes all treatment recommendations made up to 6 months after the initial visit.

Objective health outcomes

The SF-12 measures of both physical and mental functionality improved significantly after 1 month and maintained that improvement at the three and six-month follow-up (Table 6). The rate of practitioner visits increased significantly at 1- and 3-month follow-up compared to the year prior to the initial visit, but the rate of these visits had returned to baseline by the 6-month follow-up. The patients' mean number of days ill, days missed of work/school, and hospitalizations did not differ significantly from the year prior to the initial visit for any follow-up interval.

DISCUSSION

This descriptive analysis provided a picture of patients who visited an integrative medicine clinic in the context of a large allopathic community hospital in San Francisco, CA. As one would expect from the city-based locale of this clinic and the fact that services were paid on a fee-for-service basis, the patients tended to be highly affluent and well-educated. Patients were mostly Caucasian and female with multiple health problems who reported symptoms of moderate to high intensity. They collaborated with physicians during the $1^1/_2$-hour initial interview to create a treatment plan that included a wide range of treatment options, consistent with the clinic philosophy of treating the "whole person" (i.e., body, mind, and spirit). Most patients were recommended "something to take" such as dietary supplements, vitamins, and herbs, and many agreed to change their lifestyle (e.g., add exercise, adopt a contemplative practice, or change their diet).

A majority of patients recalled the recommendations in the treatment plan with little more than a general prompt, which is surprising given the often large number of treatments recommended. More than half the patients adhered well to the treatment recommendations while more than a third did not adhere at all. This finding was consistent across gender, age, education, diagnosis, and symptom severity. This adherence level is notable given the complexity of the regimens and the time and effort many treatment recommendations took to follow. The extra time allowed for the first visit may have been a factor in increasing the sense of collaboration and the level of adherence. On the other hand, anecdotally during the telephone interviews, some patients reported not adhering to the treatment plan because the number of treatment recommendations was too great or their complexity was "too much," while others mentioned that they simply did not want "another thing" to take.

TABLE 5. ADHERENCE TO TREATMENT RECOMMENDATIONS

		1 month			*3 months*			*6 months*		
Treatment recommendations	n	*Adhered* %	*Partially adhered* %	*Did not adhere* %	*Adhered* %	*Partially adhered* %	*Did not adhere* %	*Adhered* %	*Partially adhered* %	*Did not adhere* %
Substance to take	569	58.2	9.9	31.9	57.8	8.7	33.5	54.3	7.7	38.0
Self-care	173	51.4	10.1	38.5	52.1	11.4	36.6	49.6	10.6	39.8
Referral to other practitioner	139	48.7	9.9	41.4	49.9	7.9	42.2	50.2	6.7	43.1
Diet change	121	53.9	16.2	29.9	59.4	9.3	31.3	54.9	11.5	33.5
Diagnostic evaluation	86	50.7	7.2	42.1	48.1	8.3	43.6	51.6	7.6	40.8
Total	1088	54.9	10.4	34.8	55.1	9.0	35.9	52.8	8.4	38.8

Two Case Reports

Pediatric case

The parents brought in their $4^1/_2$-year-old boy to the clinic with the problem of daily fecal soiling, especially at preschool. He had abdominal pain, chest pain, fatigue, and headaches all associated with constipation. He did not sense the need to defecate, notice his soiling, or help with clean-up. Treatment by a pediatric gastroenterology specialist and a trial of biofeedback had not improved the situation.

The holistic treatment plan included increasing water intake, reward-based sitting on the toilet once per day for 5 minutes or more, having the patient clean up and do his own wash after his fecal soiling. Also, on close questioning, the patient stated that the reason he did not use the toilet at preschool was because he was afraid of it and felt trapped inside the stall. As part of the initial appointment, he had one session of guided imagery intended to increase his awareness of the need to defecate and decrease his fear of the toilet at preschool. This latter was accomplished by having him imagine that, whenever he used it, the walls of the stall magically disappeared and the inside of the stall transformed into a lovely green park area.

The patient and family adhered well ($\geq$ 90%) to five of the seven principal treatment recommendations. All of his symptoms significantly improved after 1 month. By 6 months, his constipation, fecal soiling, and chest pain had resolved, and all his other symptoms had significantly improved: fatigue decreased from 9 (on a 10 pointscale) to 3, headache from 5 to 2, and stomach pain from 4 to 2. The mother attributed the patient's improvement to the treatment plan.

Adult case

A 37 year-old women came to the clinic with fatigue and constant and worsening bone and joint pain in her knees, arms, and hands, since the birth of her first child, 20 months previously. During this period she also had multiple urinary tract infections, frequent upper respiratory and sinus infections, nausea, and abdominal bloating. She was working at a stressful but enjoyable job in software marketing. She did most of the housework and spent the rest of her time with her child, leaving "no time" for herself. She had given up the rigorous exercise program she had prior to pregnancy. The child cried often during the night and slept in the same bed as the patient and her husband. She awoke tired, seldom getting more than 3–4 hours of unbroken sleep. Despite both she and her husband working, spending was not discriplined and there were increasing financial concerns. She had used Chinese herbs and acupuncture previously with some improvement.

The holistic treatment plan emphasized getting better sleep (e.g., by moving the child into a separate room), restarting her exercise program 3 days per week, beginning a yoga class, reading a book for pleasure 3–4 times per week. She restarted Chinese herbal treatment to enhance her immune system and used nutritional supplements and Western herbs, such as echinacea, goldenseal, vitamin C, steam inhalation, and saline nasal irrigation, to improve her upper respiratory and sinus conditions.

All of her symptoms significantly improved over 3–6 months. By 6 months, her bone and joint pain had decreased from 7 (on a 10 point-scale) to 1; ear/sinus congestion from 4 to 2; and nasal discharge from 3 to 0, and her energy level was back to 85% normal. The patient adhered well ($\geq$ 90%) to 7 of the 12 principal treatment recommendations and strongly attributed her improvement to the treatment plan.

Patients reported significant improvement on all subjective measures of health status and this improvement continued or was maintained at 6 months. Symptom intensity decreased significantly within 1 month, decreased further at 3 months, and then was maintained at 6 months. These decreases in symptom intensity are similar to those reported in the study of patients undergoing TCM treatments during a 27-day stay in a residential hospital (Melchart et al., 1997). Most patients (57%) in our study attributed reducing their symptoms and achieving their health objectives to the treatment regimen. This subjective improvement was corroborated by objective measures, namely, significant improvements in the SF-12 measures of mental and physical functional status by 1 month follow-up that was maintained or improved upon at 3 and 6 months. The number of reported ill days and missed days from work or school did not change significantly from baseline. Retrospective recall of days ill and missed in the previous 12 months may have been underreported. The rate of practitioner visits increased significantly, compared to baseline, at the 1- and 3-month follow-up, but not at 6 months. This may be because, at least in part, of increased practitioner visits associated with treatment or referrals arising from the treatment plan formed at the clinic.

There are a number of significant limitations to the study. First, without a controlled trial, it is not possible to attribute the patients' improved health status to the clinic or the treatment plan. For example, patients may have sought integrative care at the clinic during the lowest point of their fluctuating health status and, thus, may have improved even

TABLE 6. CLIENT HEALTH STATUS CHANGES OVER TIME

	Means (Standard deviations)			
	Initial	*One month*	*Three months*	*Six months*
Subjective				
Symptom intensity	6.5 (1.9)	4.6* (2.3)	4.2* (2.1)	4.2* (2.3)
Health objectives	—	4.1* (3.6)	5.1* (3.6)	5.5* (3.1)
Treatment Plan help—Symptoms	—	3.0* (1.4)	3.2* (1.5)	3.3* (1.5)
Treatment Plan help—Objectives	—	3.1* (1.5)	3.4* (1.5)	3.4* (1.5)
Objective				
Days ill[a]	52.1 (102.2)	75.3 (106.1)	60.5 (103.4)	47.6 (88.6)
Days missed[a]	18.3 (61.4)	15.2 (46.5)	9.6 (31.4)	11.4 (33.4)
Days hospitalized[a]	0.45 (1.5)	0.23 (1.4)	2.1 (14.5)	1.3 (9.3)
# Practitioner visits[a]	8.5 (26.3)	22.1* (30.5)	23.4** (44.1)	14.5 (19.9)
SF-12—Physical (PCS)	44.4 (11.8)	46.8*** (11.1)	46.6** (11.0)	47.0* (10.7)
SF-12—Mental (MCS)	40.2 (11.4)	45.1* (8.7)	45.4** (7.9)	46.0* (9.1)

All possible data are represented in the means and standard deviations for each follow-up interval. Only available data at both the initial visit and follow-up interval are used for significance testing (t tests and one-way ANOVAs) comparing the follow-up interval to initial visit.

[a]Adjusted to rates of days or visits per year.

Interpretation of significance testing (two-tailed t tests) comparing follow-up intervals to initial visit: * = $p \leq 0.001$; ** = $p \leq 0.01$; *** = $p \leq 0.05$.

SF-12, Medical Outcomes Short Form 12; ANOVA, analysis of variance.

without visiting the clinic. Any prospective cohort study with new patients is a challenging undertaking in terms of recruitment and data collection. The greatest weakness with our data is the potential for selection bias. Clinic physicians were not consistent in inviting patients to participate in the research study, did not log the reasons for nonparticipation, and were potentially selective in recruitment. This is understandable given the severity of some patients' disease and the intrusiveness of explaining a study, gaining consent, and getting long-term cooperation during the initial clinic interview. In hindsight, it is clear that all physicians need to support efforts to recruit patients fully and to clearly document recruitment efforts and reasons for refusal. If physicians invited patients who were healthier or more cooperative, the results on recall, adherence, and health outcomes may be better than if all new patients had been recruited. In addition, further bias may have been introduced by the fact that patients anticipated being asked to recall treatment recommendations. The relatively nonadherent patients may have been motivated to drop out while those remaining in the study may have increased their adherence creating a bias. Finally, the subjective report and recall of health status could contain errors or biases to favor a better or worse presentation of the patient's clinical condition.

Patients who choose an alternative or integrative medicine clinic are likely to have multiple diagnoses, many with long-standing symptoms, and a succession of health care practitioners. The complexity of health problems and the corresponding complexity of the treatment regimen make it difficult to determine specific benefits. There remains a need to establish validated and easy-to-administer outcome measures, both subjective and objective, such as the Likert scales and SF-12 used in our study, that accurately capture changes in both global and specific health outcomes.

The present study only covers the surface of what is going on with patients. For many patients, their illness has become a dominant feature in their lives. The causes of their illness may be deep-seated and tied to overarching life issues. To resolve these patients' health issues, the practitioners may need to continue to explore and evolve multifaceted therapies that engage patients to work deeper and longer in addressing the underlying causes of their illnesses.

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