Evaluation of a Residential Kundalini Yoga Lifestyle Pilot Program for Addiction in India

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ABSTRACT. Previously reported substance abuse interventions incorporating meditation and spiritual approaches are believed to provide their

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benefit through modulation of both psychological and pyschosocial factors. A 90-day residential group pilot treatment program for substance abuse that incorporated a comprehensive array of yoga, meditation, spiritual and mind-body techniques was conducted in Amritsar, India. Subjects showed improvements on a number of psychological self-report questionnaires including the Behavior and Symptom Identification Scale and the Quality of Recovery Index. Application of comprehensive spiritual lifestyle interventions may prove effective in treating substance abuse, particularly in populations receptive to such approaches. doi:10.1080/15332640802081968

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INTRODUCTION

Historically yoga is a set of mind-body practices whose ultimate goal is the achievement of a higher state of consciousness. The three main techniques in yoga practice include meditation, breathing exercises and physical postures. Practice of these techniques is well-known to elicit the relaxation response associated with a reduction of arousal, deactivation of the stress response system and the generation of a state of physical and mental well-being (Granath, Ingvarsson, von Thiele, & Lundberg, 2006; Michalsen et al., 2005). From the meditation component, practitioners also develop an increasing self-awareness of both their psychological and physical states, which can lead to an increase in self-control and self-efficacy (La Forge, 1997; Waelde, Thompson, & Gallagher-Thompson, 2004). Not surprisingly, yoga and meditation have also been widely adopted as therapeutic practices for a wide variety of psychological conditions such as anxiety and depression, medical conditions which have an underlying stress-related component, and a number of neuromuscular conditions (Khalsa, 2004; Bonadonna, 2003).

Yoga and meditation have been proposed as an effective treatment for substance abuse and addictive behavior through their potential impact on a number of factors in this complex condition, which has numerous psychological, behavioral and physical components: (1) reduction of stress (and/or tension) and its overt behavioral and underlying neuroendocrine components (Walton & Levitsky, 1994; Calajoe, 1986; Klajner,

Hartman, & Sobell, 1984; Kremer, Malkin, & Benshoff, 1995); (2) improvement of impaired mood such as reduction of depression and anxiety and a resulting increase in psychological well-being (Calajoe, 1986; Kremer et al., 1995); (3) induction of a peak experience or higher state of consciousness, effectively replacing the attraction of a substance-induced high (Neiss, 1993; Calajoe, 1986; Dohner, 1972; Galanter, 1976; Lohman, 1999); (4) improvement in self-awareness of personal psychological and psychophysiological states allowing for improved self-efficacy through the ability to intervene and prevent destructive or maladaptive behavior before its onset (Calajoe, 1986; Dohner, 1972; Lohman, 1999); and (5) the establishment of improved self-esteem and a better philosophical relationship and understanding between the individual and his/her internal and external (social) worlds (Calajoe, 1986; Dohner, 1972).

A number of research studies have evaluated the effectiveness of yoga and meditation techniques alone or as part of a broader treatment, with a majority of these studies on meditation. In particular, there is a good deal of research showing the effectiveness of Transcendental Meditation alone on a wide variety of abused substances addictive behaviors (reviewed in Hawkins, 2003). However, studies of other meditation interventions either alone (Murphy, Pagano, & Marlatt, 1986) or in combination with other techniques (Denney & Baugh, 1992; Rohsenow, Monti, Martin, Michalec, & Abrams, 2000) have also shown benefit. Several addiction treatment programs have incorporated yoga as a contributing technique in a multicomponent treatment (Agne & Paolucci, 1982; Cernovsky, 1984; McClellan, 1975), but there have also been treatment programs in which yoga or a yoga lifestyle approach has been a more central element in the therapy (Sharma & Shukla, 1988; Lohman, 1999).

Only a few substance abuse research studies have evaluated the effectiveness of yoga. An older study evaluating a wide variety of outcome measures in alcoholics, in which a yoga treatment was one of four treatments compared, revealed that the yoga-treated subjects showed normalization of their cortisol and catecholamines (Subrahmanyam, Satyanarayana, & Rajeswari, 1986). In a study of withdrawal symptoms in drug addicts, a 15-day yoga exercise intervention had statistically greater improvements in these symptoms than did an untreated control (Chauhan, 1992). In another randomized controlled trial, an eight-week yoga intervention applied to alcohol dependent subjects showed a statistically greater improvement in the severity of their alcohol dependence than that observed for subjects in a physical training exercise control group (Raina, Chakraborty, Basit, Samarth, & Singh, 2001). Finally, in a randomized controlled trial of clients in outpatient methadone maintenance

treatment, subjects undergoing a weekly yoga class showed equivalent improvements in a variety of psychological, sociological and biological measures to subjects undergoing a group psychotherapy intervention over a six-month period (Shaffer, LaSalvia, & Stein, 1997).

It is believed that the prevalence of drug abuse in India is on the increase due to India's geographical location and due to changes in social structure and attitudes over the past few decades (Dorabjee & Samson, 2000; Benegal, 2005). A recent comprehensive survey study has indicated that in 2001 there were about 62.5 million alcohol users, about 8.7 million cannabis users and about 2 million opiate users in the country (Ray, Mondal, Gupta, Chatterjee, & Bajaj, 2004). A recent report has indicated a high prevalence of drug abuse in the state of Punjab in northwestern India (Anonymous, 2006).

The 3HO Foundation SuperHealth program on addiction is a residential group addiction treatment program based on yoga and meditation lifestyle practices and has been running programs in Tucson, Arizona since the early 1970s (Lohman, 1999). This report describes a preliminary pilot program of a pilot 3HO SuperHealth yoga lifestyle-based residential treatment program for addiction in Amritsar in the state of Punjab, India.

METHODS

Subject Population

Subjects were derived from a sample of volunteer substance abusers who had responded to advertising in newspapers in the state of Punjab, India, a state with a high Sikh population. All subjects were required to complete a medical detoxification program (approximately three days) provided by the Dr. Vidya Sagar Mental Hospital and were required to be accompanied by a family member during this time. All were interviewed as to interest and appropriateness together with their family members. Candidates were required to be males aged 18 and older and were screened and excluded for psychosis or a history significant of serious or ongoing violence. After the initial screening, subjects signed informed consent for the research procedures. Subjects were then admitted to the program for a 1-3 day trial period, during which initial outcome measures were administered and during which subjects could be discharged from the program for physical and mental health or compliance issues. Women were excluded due to a hospital directive which prohibited a mixed gender population for this project.

Treatment Program

Although the program content evolved over time, the structure was a 90-day residential treatment program using Kundalini Yoga and Meditation, as taught by Yogi Bhajan, as the primary therapeutic modality. The residential program was housed in a new dedicated wing of the Dr. Vidya Sagar Mental Hospital, a state-run psychiatric hospital in the city of Amritsar, India. The hospital facility was basic in nature and typical of Indian medical facilities. Family members were not permitted into our treatment environment during the first month of treatment. Most of the program participants slept two to a room. Adjacent to the ward, the program made use of a patio area, used often to socialize, be out in the open, and for games such as kickball and various tossing games. Nurses attended the participants on a daily basis for the measurement of vital signs.

For most of the 90-day period, three Kundalini yoga classes were held per day in the morning, afternoon and late afternoon. Eight certified Kundalini Yoga instructors who were also Sikhs (seven were English-speaking and not of Indian descent) were involved in the program at varying times throughout the program and provided the yoga instruction. About 45 days into the program, additional staffing allowed for an evening class to be added. Also, about 45 days into the program, clients were taught to teach each other the yoga program as a way to increase a sense of mastery and to enhance the possibility of the practice continuing beyond the 90 days. During this last half, clients taught each other classes, with staff supervision, at least once per day. The content of the classes was standard Kundalini yoga practices and sets incorporating physical postures, breathing techniques, meditation and mantra. Although the yoga classes were the primary therapeutic intervention, also of note were the therapeutic relationships and the family relationships. Therapeutic relationships were developed in individual and group counseling and in multi-family group sessions (after the first month). In the multi-family group sessions, meditation techniques were taught as well. Five professional health-care providers who were also Sikhs contributed to the treatment program and all had previous experience with psychotherapy and the drug treatment programs.

Additional program components that played a smaller role in the treatment program were a mostly vegetarian diet, herbs, vitamins and spices used for cleansing and rebuilding the body systems (digestion, elimination, respiratory, nervous, glandular, etc.), recreational, music and dance therapies, spiritual studies and Sikh religious practices,

Sat Nam Rasayan (a form of energy medicine/spiritual healing), acupuncture sessions, videos of lectures on spirituality and yoga lifestyle, education on addiction and relapse prevention which included training as a teacher of Kundalini Yoga, aftercare yoga/meditation support groups, and some massage therapy provided by hospital staff. Compliance with the treatment program was enforced in that all subjects were required to attend all activities of the program unless medically ill.

Outcome Measures

Treatment outcome measures were acquired at baseline, mid-treatment, end-treatment, and at one, three and 12-month follow-ups after the treatment phase. The outcome measures below were evaluated at baseline, mid- treatment, end-treatment and at one-month follow-up.

The Perceived Stress Scale (PSS) is a widely used 10-item self-report questionnaire, which assays the degree to which situations in one's life are appraised as stressful. Individual questions address how unpredictable, uncontrollable and overloaded respondents find their lives and current levels of experienced stress over the past month. Respondents are asked about the frequency at which they felt a certain way. It has adequate internal and test-retest reliability (Cohen, 1988).

The 32-item Behavior and Symptom Identification Scale (BASIS-32) measures the change in self-reported symptom and problem difficulty over the course of treatment. It identifies a wide range of symptoms and problems that occur across the diagnostic spectrum. Validated and found reliable in both inpatient and outpatient settings, it assesses treatment outcomes from the patient perspective before and after receiving care. The survey measures the degree of difficulty experienced by the patient during a one-week period on a five-point scale ranging from no difficulty to extreme difficulty. The survey is scored to provide an overall score with five subscales for the following domains of psychiatric and substance abuse symptoms and functioning: Relation to Self and Others, Depression and Anxiety, Daily Living and Role Functioning, Impulsive and Addictive Behavior, Psychosis (Eisen, Wilcox, Leff, Schaefer, & Culhane, 1999).

Quality of Recovery Index (QRI, provisional version 7/27/00, the SASSI Institute) is designed to measure change in behaviors that reflect the extent to which the individual is making the positive life changes that often accompany recovery from substance-related disorders. The QRI consists of 38 items that reflect quality of recovery. Clients are instructed to check the word that best describes how often they have experienced

each of the 38 behaviors during the time period specified. Items are either positively or negatively phrased and report frequency (e.g., "never" to "rarely," "often" to "almost always"). In addition to a global score, there are also scores available for four subscales, Sense of Emotional Well-Being, Active Recovery, Social and Work-School Performance. The QRI (and its subscales) is provisional and is in a long-term process of development of empirical indices of its psychometric properties.

Due to the fact that most of the subjects were not fluent in English, the questions on the questionnaires were translated by a number of hired and volunteer translators and the subjects' answers recorded. Outcome measures were evaluated statistically for the four times points with one-way repeated measures of variance (RMANOVA) for each scale and subscale, and Tukey's Honestly Significant Difference (HSD) post hoc tests evaluated statistical significance between values at different time points.

RESULTS

A total of 10 subjects formally enrolled and gave written informed consent. One of these subjects was admitted to the program late, three weeks after the start. Another subject was subsequently disimpaneled for non-compliance with the program. The male subjects were from a cross-section of the socioeconomic spectrum: from the very poor to the very privileged; both rural and city dwellers; shopkeepers, farmers, businessmen and professionals. Some were of the Hindu religion and some were of the Sikh faith but they all had experience with or familiarity with the spiritual values imbedded in the program. All were from the state of Punjab in northern India that has a high Sikh population and had close family ties. All had long histories of abuse with a variety of substances, including alcohol, opiates and barbiturates.

Questionnaire data from the eight enrolled subjects who completed the baseline questionnaires were analyzed. Their ages ranged from 20 to 57 (average 30.4 years $\pm$ 12.2 SD). Of these eight subjects, one did not complete the last four weeks of the treatment program due to a limited leave of absence from his job and did not complete the end-treatment and follow-up questionnaires, one did not complete the last two weeks of treatment for medical reasons and did not complete the end-treatment questionnaire, and one left the program temporarily after sustaining a broken leg but returned later in the program and did not complete mid-treatment and end-treatment questionnaires, therefore the acquired sample sizes at

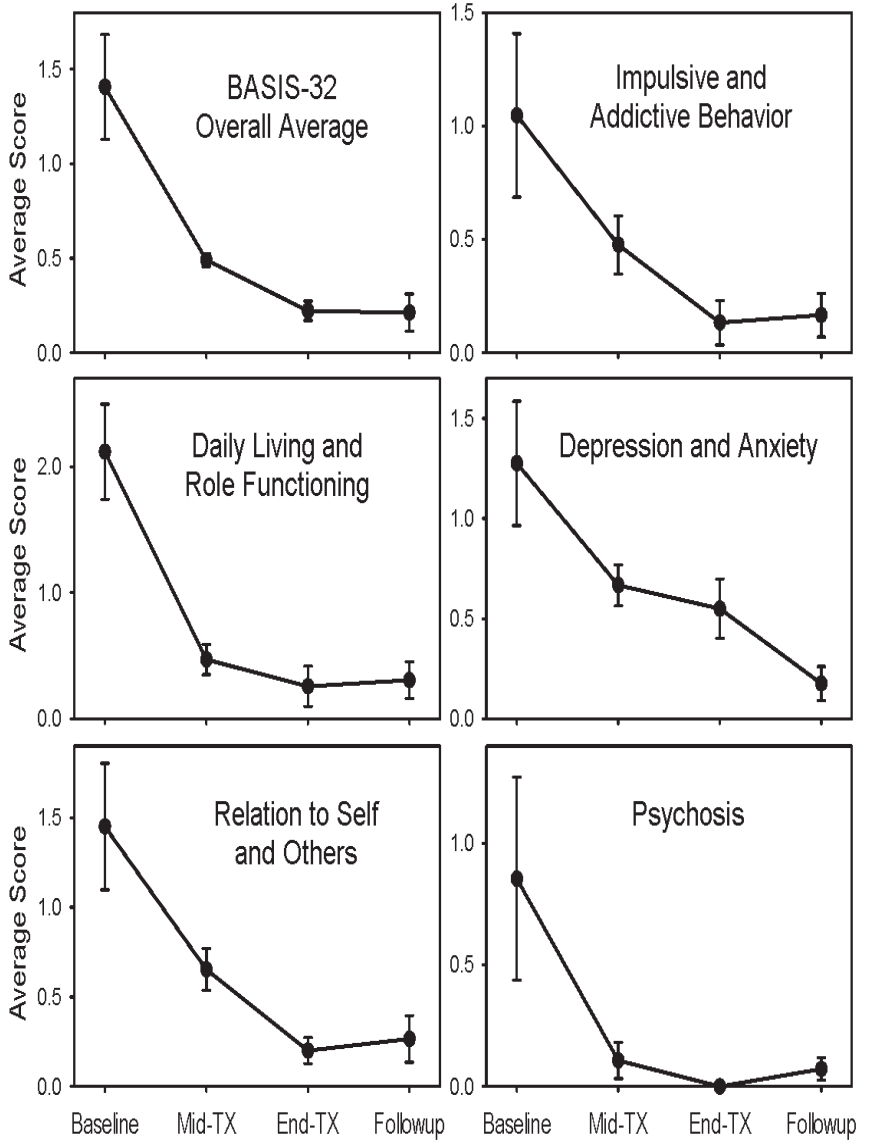
each of the four time points were baseline (N = 8), mid-treatment (N = 7), end-treatment (N = 5) and follow-up (N = 7).

Average scores on the BASIS-32 total score and for all of the subscales showed clear declines from the baseline to the follow-up evaluations (Figure 1). RMANOVAs on the total score and scores for the Relation to Self and Others subscale showed significant main effects for time, $p < 0.05$. Post hoc tests showed statistically significant improvements between the baseline and follow-up measures ($p < 0.05$) for the total scores, and statistically significant improvement between the baseline and end-treatment measures ($p < 0.05$) for the Relation to Self and Others subscale scores. RMANOVAs on the Daily Living and Role Functioning subscales showed significant main effects for time, $p < 0.01$ and the post hoc tests showed statistically significant improvements between the baseline and follow-up measures ($p < 0.01$). RMANOVAs on the Impulsive and Addictive Behavior, Depression and Psychosis subscales almost showed significant main effects for time ($p = 0.06$, $p = 0.07$, $p = 0.07$, respectively).

Average scores on the QRI for the total score and for all of the subscales showed clear declines from the baseline to the follow-up evaluations. RMANOVAs on the total score and scores for the Active Recovery and Work-School Performance subscales showed significant main effects for time, $p < 0.05$ and the post hoc tests showed statistically significant improvements between the baseline and follow-up measures ($p < 0.05$). However, no significant main effect for time was found for the Sense of Emotional Well-Being subscale ($p = 0.14$) or Social subscale ($p = 0.18$). Average scores on the PSS at baseline were 18.9 ± 9.3 (S.D.), dropped to 16.2 ± 2.1 at mid-treatment and held somewhat steady at 15.4 ± 0.5 at the end-treatment and at 16.9 ± 7.6 at the follow-up evaluations. A RMANOVA did not show a significant main effect for time ($p = 0.44$).

Qualitatively, by the end of the program subjects achieved greater flexibility and physical strength, their energy level increased, they became brighter and more open in appearance and had a clearer complexion, they appeared more focused and alert, they were more verbal and made better eye contact and were more able to ask for appropriate help (as distinct from medication seeking behavior), they expressed fewer complaints about pain, sleep or physical discomfort and they exhibited less emotional reactivity. The subjects attributed their feeling better as a result of the yoga and noted that the caring staff was the most important part of the program to them. They took pride in teaching their peers yoga classes and they also appeared to have reconnected with their personal spiritual practices and devotion. Compliance to the treatment program

FIGURE 1. Average Scores on the BASIS-32 Questionnaire at Baseline, Mid-Treatment (Mid-TX), End-Treatment (End-TX) and Follow-Up for the Total Overall Questionnaire and for Each of the 5 Subscales



was high due to the required participation, however, compliance with program rules after hours, when staff was not present, was poor. Despite the enforced nature of the treatment program, and the language barrier between the subjects and the executive members of the staff, subjects continued their participation voluntarily and were consistently and universally enthusiastic about participation in the various program components. By the end of the program the subjects had developed a high degree of trust and respect for the therapists and instructors.

DISCUSSION

The participants benefited substantially from this comprehensive residential, group yoga lifestyle program. This was confirmed by both qualitative observations and by responses on the questionnaire instruments. Improvements were most encouraging in the BASIS-32 scores and the subscales on this questionnaire, suggesting that the subjects exhibited improvements in a wide range of self-reported symptoms, problems and difficulties over the course of treatment. This was confirmed by the improvements in total score and the Active Recovery and Work-School Performance subscales of the QRI.

However, scores on the PSS did not appear to improve over the course of treatment, a notable exception given that yoga and meditation practices are well-known for their capability of effectively managing stress. A potential explanation for this discrepancy could have been the fact that some of the subjects could have been under the influence of their substances of abuse at baseline, and therefore reported lower stress levels.

The Punjab is a region of India undergoing a significant cultural transition due to its vulnerable geographical location in the "Golden Triangle," which leaves it highly prone to the prevalence of substance abuse. Furthermore, the rapid economic development in India is accompanied by the import of Western cultural influence, which is displacing the traditional cultural value system. It is likely that the success of this program was due at least in part to the incorporation of spiritual and religious practices (yoga, meditation, chanting, etc.) respected by the program participants as nationally popular and inherently valuable. To some degree the rediscovered spiritual practices on the part of the subjects were likely influenced by the fact that most of the therapists were Westerners who have adopted spiritual lifestyles (yoga and Sikh practices) endogenous to their own culture. There was a suggestion that the participants were able to reframe their attitudes and relationships to their traditional cultural

heritage and were inspired by the fact that Westerners felt strongly enough about the traditional practices to adopt them as a lifestyle.

The addition of spiritual components into addiction treatment programs, including both religious and non-religious spiritual practices such as meditation, is well-known. However, the potential value of this component as well as its limitations remains to be evaluated (Galanter, 2006; Cook, 2004). A recent evaluation of the research literature of addiction studies incorporating spirituality suggests that there are 13 conceptual components of the definitions and descriptions of spirituality including components known to also be associated with meditation and yoga such as transcendence, consciousness, wholeness, non-materiality and self- knowledge (Cook, 2004). It is conceivable that many of these components are therapeutic in addiction.

There were a number of weaknesses and limitations in this pilot program and its evaluation that are notable. Foremost is the small group size, which undoubtedly impacted the analyses of statistical significance of the questionnaire outcome measures. Secondly, compliance with the questionnaires was uneven across subjects over the different time points, further compromising the strength of the statistical analyses. Finally, a major unknown is the use of a translator to interpret the individual items on the questionnaires. The BASIS-32, QRI and PSS are all designed as self-report questionnaires and the inclusion of a translator may yield different results due to subtle bias imposed by the translator. Furthermore, the translation itself may have lead to inaccuracies due to cultural differences in interpretation of individual questionnaire items.

Given our preliminary experience with the pilot program, it seems that if such a program is to be repeated in India, it should be done with participants who are fluent in English. The complexities associated with language translation issues created problems for both the implementation of the programs (by English-speaking therapists and instructors) and for the integrity of the self-report questionnaires that have been developed and validated with patients fluent in English.

Given the multicomponent nature of the treatment program, it is difficult to determine what were the most important elements contributing to the clinical improvements. However, based upon participant responses, it is likely that the yoga-based practice components had significant impact on the participants. Future programs that might alter the number and/or intensity of different treatment components will help determine the most effective practices yielding the greatest benefit to this population.

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