

Changes in Spirituality and Well-Being in a Medically Based Lifestyle Program

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ABSTRACT:

Context: Interventions that influence spirituality are needed if we are to obtain convincing evidence that spirituality has health benefits as suggested by epidemiological studies. There has been little research on identifying or developing such interventions.

Objective: To evaluate the extent to which participation in a medically based lifestyle change program resulted in changes in spirituality, and whether changes in spirituality were related to certain components of the program and to changes in well-being, meaning in life, and tendency to become angry.

Design: Participants filled out questionnaires at the beginning and end of the program.

Setting and Participants: 101 participants in the Rice Diet Program in Durham, North Carolina.

Intervention: The program consists of a very low fat diet, exercise, and optional participation in yoga and meditation classes, lectures, and discussion and support groups, including a discussion group on spirituality.

Results: Increased spirituality was reported by 51% of the participants. This increase was associated with increased well-being, increased meaning in life, decreased anger, and participation in meditation and yoga classes even though these classes were not presented in a spiritual context.

Conclusions: Environments that nurture self-awareness, including activities such as meditation and yoga, may promote fundamental changes in personal values that are spiritual in nature. These changes appear to be a significant aspect of healthy lifestyle change for many persons.

Epidemiological studies indicate that religion or spirituality is correlated with better health,^{1,2} but several reviewers and commentators have pointed out the need for randomized trials with interventions that change spirituality if we are to obtain convincing evidence that spirituality actually influences health.³⁻⁹ This research strategy requires that health-based interventions influencing spirituality be identified or developed; however, there has been little research on this topic.

Kennedy, Abbott, and Rosenberg⁹ found that 78% of the participants in a retreat program for cardiac patients reported increased spirituality and that this increase was associated with increased well-being, increased sense of meaning in life, and decreased tendency to become angry. Spirituality was emphasized as a “core component” of the retreats, which included activities such as meditation, prayer, yoga, relaxation, breathing exercises, visualization, physical exercise, communication skills, social support, and various discussion groups. No attempt was made to determine the specific program components that influenced spirituality nor do we have any information about the extent to which these results apply to other groups and settings .

In our work at a long-established program dedicated to diet and exercise treatment of metabolic, cardiovascular and renal problems, we have noted that participants who succeed in making lifestyle changes often link their success to fundamental changes in personal values that they describe in spiritual terms. As the patients recognize and eliminate the values and expectations that lead to unhealthy lifestyle habits, new values based on self-worth and personal growth emerge. These new values are associated with a significantly increased sense of well-being and a renewed sense of meaning and purpose in life.

The primary purposes of the present study were to investigate the extent to which program participants reported changes in spirituality and whether changes in spirituality were related to participation in certain program components. This medically based lifestyle program has a more diverse patient population than the cardiac retreats noted above and does not emphasize spirituality or explicitly treat it as a core component. We were also interested in whether changes in spirituality were associated with changes in well-being, sense of meaning in life, and tendency to become angry, and to participant characteristics at program entry.

METHODS

Participants and Procedure

All new participants enrolling in the Rice Diet Program in Durham, North Carolina filled out short questionnaires on entering and leaving the program. As part of a larger evaluation of the existing program, we planned to collect data on 100 participants who attended for at least 10 days, which resulted in data from 101 participants. The duration of participation depends on the participants health condition and available time. Participation for at least 10 days was considered the minimum for an effect. Longer stays are more typical. The entry questionnaire was contained in the package of forms filled out by participants when they initially registered on-site. The final questionnaire was filled out on the participants' concluding day. The

components of the program were not modified for this study. The spouses of patients often participate along with the primary patient, and often have chronic illness or lifestyle risk factors.

Data were collected from 65 women and 36 men. The mean age was 55 years (range 14-77). The distribution of diagnoses was as follows: obesity (82 cases), hypercholesterolemia (41), hypertension (28), coronary artery disease (14), diabetes mellitus (13), other conditions (9), prevention/healthy (3). The duration of participation ranged from 11 to 238 days, with a mean of 34 days and median of 25.

This outpatient program consists of an initial medical evaluation, the required consumption of a high carbohydrate, very low fat, very low sodium diet provided by a dedicated food service, and regular walking exercise. Optional program components include yoga and meditation classes, discussion and support groups, lectures, and recreational activities. The yoga and meditation classes focus on self-awareness and “letting go” of physical tension and mental distress, but without an explicit spiritual focus. The support groups provide a safe, nurturing environment in which participants may verbalize and share their problems, concerns, and motivations. The lectures cover health-related topics such as nutrition, stress management, dealing with anger, and discussion of various medical conditions and treatments. The whole program involves a high degree of formal and informal interaction with staff and with fellow participants.

The program encourages self-awareness and self-understanding, but does not advocate a particular spiritual perspective or even spirituality in general. The staff is respectful and supportive of spiritual matters when they arise, and a weekly optional "Inner Healing" discussion group allows interested participants to discuss spiritual aspects of their problems and their efforts toward self-change.

Measures

The questionnaires were the same as those described in the cardiac retreat study.⁹ Additional information on the rationale and item selection is provided in that report. Following the strategy of the Medical Outcomes study,¹⁰ the scores for each scale on the entry questionnaire were linearly adjusted so that zero was the lowest possible score and 100 the highest.

Entry Questionnaire.

For the initial questionnaire, well-being was measured with 12 items used with permission from the Medical Outcomes Study. The items asked how often during the past month the participant had experienced feelings of positive affect (happiness), depression, or anxiety. The 6 response options ranged from “all the time” to “none of the time.” The reliability for the data in this study was 0.90.

Spirituality was measured as the mean of 3 items. Each item had 9 response options with anchors at each end. The first question was “How important to you are religious or spiritual beliefs?” with anchors of “Not at all important, many other things are more important” and “Extremely important, my religious or spiritual beliefs are the center of my entire life.” The second question was “How much do religious or spiritual beliefs help you to manage or cope with stress in your life?” with anchors of “Not at all, I rely on other coping mechanisms” and

“Extremely important: My religious or spiritual beliefs are my primary means of coping.” The third question was “Do you believe that your life is watched over or guided by a higher power or divine being?” with anchors of “No, I’m certain it is not” and “Yes, I’m certain that it is.” The reliability for the present data was 0.89. The intent of the questions was to broadly include religious and/or spiritual beliefs and feelings that were meaningful to the participants.

Meaning and purpose in life was measured with a single item that asked “To what extent have you found meaning and purpose in your life?” The response options were 1 through 9 with anchors of “Not at all; my life has no meaning or purpose” and “Completely; I have an extremely strong sense of meaning and purpose.”

Tendency to become angry was measured with 4 items that asked “How often during the past month did you ... get into an argument; become annoyed or irritated; get angry, but hide or suppress your anger; become angry or loose your temper.” The 6 response options ranged from “Never” to “Several times per day.” These questions are similar to items in other anger scales but were adapted to the Medical Outcomes Study format. The reliability for the present data was 0.78.

Exit Questionnaire.

The final questionnaire asked participants to indicate the changes in certain feelings and beliefs resulting from their experience in the program. Each item had 7 response options ranging from “strong decrease” (scored as -3) to “strong increase” (scored as +3). Items were adapted from the entry questionnaire with 6 items for well-being (reliability 0.88), 2 spirituality items (reliability 0.81), 2 anger items (reliability .76), and 1 item for meaning and purpose in life.

Participants were asked to rate how they had changed because the questionnaires derived from the Medical Outcomes Study applied to the previous 30 days and could not be meaningfully readministered for those who stayed less than 30 days. Also, based on previous, unpublished data using spirituality questionnaires, we expected that a significant proportion of the participants would have the highest possible entry spirituality score on this or any other spirituality questionnaire. Therefore, readministering the initial questionnaire would not be an effective way to measure increases in spirituality. This expectation was verified in the previous cardiac retreat study.⁹

Participation in Optional Program Components.

Staff separately rated participation in the yoga and meditation classes, and in the support groups using a three-point scale. A rating of one indicated the person rarely or never participated, two, that the person occasionally participated (this included those who attended several times and dropped out), and three, that the person participated most of the time. Participation in the less frequent Inner Healing discussion group was rated on a two-point scale, with one for those who rarely or never attended and two for those who often or always attended.

RESULTS

Characteristics at Entry

The mean spirituality score at program entry was 59 ± 31 (\pm SD). Eleven people had the highest possible spirituality score (100) and 6, the lowest (0). Consistent with previous findings,⁹ spirituality was significantly correlated with meaning in life ($r=0.41$, $p<.0001$), but not with well-being ($r=0.08$). Well-being was positively correlated with meaning in life ($r=0.51$, $p<.0001$) and negatively correlated with tendency to become angry ($r=-0.46$, $p<.0001$).

Changes at Program Exit

As shown in Table 1, 51% of the participants reported an increase in spirituality. The maximum possible change was reported by 10 (10%) of the participants. On the other measures, 95% of participants reported an increase in well-being; 78%, an increase in meaning in life; and 57%, decreased anger.

TABLE 1. Summary of changes in 101 patients at the end of the program

Measure	Mean*(\pm SD)	Decreased**	No Change	Increased
Spirituality	0.81(\pm 1.07)	1(1%)	48(48%)	51(51%)
Well-Being	1.54(\pm 0.96)	1(1%)	3(3%)	95(95%)
Meaning in Life	1.67(\pm 1.18)	2(2%)	20(20%)	78(78%)
Anger	-0.89(\pm 1.19)	57(57%)	34(34%)	8(8%)

*Values ranged from -3 (strong decrease) to +3 (strong increase); zero represented no change.

**Actual number of respondents on each measure varied from 99 to 100 due to missing data

As shown in Table 2, people who reported increased spirituality at program exit also tended to report increased well-being ($r=0.60$) and increased meaning in life ($r=0.52$). Changes in well-being correlated ($r=0.54$) with changes in meaning in life. A reduced tendency to become angry was associated with increases in spirituality, well-being, and meaning in life.

TABLE 2. Correlations among changes and program components

	1.	2.	3.	4.	5.	6.	7.	8.
1. Change in Spirituality								
2. Change in Well-Being	0.60 ^{***}							
3. Change in Meaning	0.52 ^{***}	0.54 ^{***}						
4. Change in Anger	-0.49 ^{***}	-0.75 ^{***}	-0.51 ^{***}					
5. Initial Spirituality	0.49 ^{***}	0.29 ^{**}	0.36 ^{***}	-0.22 [*]				
6. Meditation	0.31 ^{**}	0.27 ^{**}	0.27 ^{**}	0.20	0.11			
7. Yoga	0.26 ^{**}	0.17	0.21 [*]	-0.10	0.12	0.72 ^{***}		
8. Support Group	0.12	0.06	0.16	-0.05	0.15	0.72 ^{***}	0.72 ^{***}	
9. Inner Healing	0.16	0.17	0.10	-0.07	0.03	0.42 ^{***}	0.29 ^{**}	0.34 ^{***}

* p<.05; ** p<.01; *** p<.001.

Number of respondents varied from 97 to 100 for each correlation due to a few patients with missing values

Participant Characteristics and Program Components

Increased spirituality at program exit was positively related to degree of spirituality at entry ($r=0.49$, see Table 2). The 98 participants with evaluable data were divided into low, medium, and high values of initial spirituality; increased spirituality was reported by 24/38 (63%) of the participants in the high group, 17/30 (57%) in the medium group, and 9/30 (30%) in the low group. Neither simple correlations nor stepwise multiple regression detected any relation between changes in spirituality and the entry characteristics of age, gender, medical diagnosis, well-being, meaning in life, or anger.

Participation in the optional program components is summarized in Table 3. Participation was relatively evenly distributed across each of the optional program components, except that only 29% chose to participate in the Inner Healing group.

Increased spirituality was associated with participation in meditation ($r=0.31$, $p<.01$) and yoga ($r=0.26$, $p<.01$) classes (Table 2). Participation in yoga and meditation classes was not significantly correlated with spirituality, well-being, or meaning in life at program entry ($p>.2$ for all correlations). These results indicate that the changes in spirituality associated with meditation and yoga were not simply due to participation by individuals who were initially more spiritual. This point was confirmed by multiple regression analysis. When change in spirituality was predicted from participation in meditation and initial spirituality, the beta weights were 0.47 ($p<.0001$) for initial spirituality and 0.26 ($p<.005$) for meditation. When participation in yoga

was used instead of meditation, the beta weights were 0.48 ($p < .0001$) for initial spirituality and 0.22 ($p = .01$) for yoga. However, because participation in yoga and meditation were highly correlated with each other ($r = 0.72$), only meditation was selected in stepwise multiple regression.

TABLE 3. Attendance at optional program components

<u>Program Component</u>	<u>Number of Participants</u>
Meditation Classes	
Rare or never	51
Occasional	17
Most of the time	31
Yoga Classes	
Rare or never	30
Occasional	27
Most of the time	43
Support Groups	
Rare or never	33
Occasional	29
Most of the time	37
Inner Healing Group	
Rare or never	72
Occasional or most of the time	29

Participation in the Inner Healing group was not significantly related to either changes in spirituality or initial spirituality scores. Some participants with high spirituality scores at entry chose not to participate and some with low scores chose to participate. Similarly, participation in the support groups was not related to increased spirituality. The duration of program participation also was not related to change in spirituality.

DISCUSSION

This study confirmed our observation that spirituality is associated with lifestyle change for many people in this program. At the conclusion of the program, 51% of the participants reported increases in spirituality. These changes occurred even though the lifestyle change program focused on diet, exercise, self-awareness, self-understanding, and social support, and did not explicitly advocate a spiritual perspective. The study also confirmed that increased spirituality was positively associated with increased well-being, increased sense of meaning and purpose in life, and decreased tendency to become angry.

Our finding that increased spirituality was associated with attendance at meditation and yoga classes, but not discussion/support groups, is one of the most interesting results of this study. This result suggests that activities aimed at increasing self-awareness and internal focus had more impact than discussion groups, even when the discussion sometimes focused on "spiritual matters." The facilitating role of meditation and yoga classes appeared to be independent of initial spirituality, the only other factor that predicted change in spirituality. However, because participation in meditation and yoga were self-selected rather than randomly assigned, it is possible that they actually served as surrogates for some unmeasured characteristic that influenced change in spirituality. This possibility appears unlikely to us, but randomized studies are needed for definitive evidence. At a minimum, the present study provides a useful foundation for developing interventions for randomized trials.¹¹

Meditation and yoga are widely accepted stress management techniques that can be presented without an overt spiritual context.¹² The possibility that these techniques help people change their personal values in favor of a more healthy lifestyle deserves further investigation.

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