SELF IDENTITY THROUGH HO'OPONOPONO AS ADJUNCTIVE THERAPY FOR HYPERTENSION MANAGEMENT

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Objective: Self Identity through Ho'oponopono is a step-by-step problem-solving approach to identify and relieve stress. The objective of this study was to determine if Self Identity through Ho'oponopono along with standard medical therapy might better control hypertension than standard therapy alone.

Design, Setting, Participants: Twenty-three Asian, Hawaiian, and other Pacific Islanders from a local community in Hawaii participated in a longitudinal design comparing pre- and post-intervention measures of blood pressure.

Intervention: Participants attended a half-day class on Self Identity through Ho'oponopono to learn ways to create balance and correct stress through an understanding of their own self identity. Participants learned processes to care for themselves through repentance, forgiveness, and transmutation and how to apply the processes in their daily lives.

Main Outcome Measures: Repeated blood pressure measurements were compared before and after the intervention using generalized estimating equations; two spirituality questionnaires were administered before and after the intervention and analyzed with paired t-tests.

Results: Systolic blood pressure decreased after the intervention, averaging 11.86 mm Hg below pre-intervention levels. Diastolic blood pressure decreased by 5.44 mm Hg. Spirituality scores significantly increased after the intervention.

Conclusions: Self Identity through Ho'oponopono was associated with a statistically and clinically significant reduction in mean blood pressure. Spirituality scores increased after the intervention. We conclude that Self Identity through Ho'oponopono may be an effective adjunctive therapy for hypertension. Further research is needed to validate these preliminary findings. (*Ethn Dis*. 2007;17:624–628)

Key Words: Self Identity Ho'oponopono, Hypertension, Spirituality

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INTRODUCTION

Our article describes an initial study of Self Identity through Ho'oponopono, which is a spiritual intervention developed in Hawaii to identify and relieve stress. It is a method of caring for the self through the process of repentance, forgiveness and transmutation. Self Identity through Ho'oponopono is also an approach to develop a better working relationship among the conscious mind, the subconscious, and the superconscious (mind, body and spirit) allowing individuals to understand themselves better. The word ''Ho'oponopono'' means ''to make right, to rectify, and to correct.''[1–3] Adherents of the intervention believe that the more the mind, body, and spirit work together, the more the individual will release sources of stress, tension, and conflicts that may affect health. In this study, we hypothesized that a better understanding of self, gained by attending a class on Self Identity through Ho'oponopono, may help control high blood pressure. The class was offered to participants with prehypertension and hypertension as an adjunct to standard medical therapy.

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METHODS

Study Design

Participants served as their own controls in a pre-test/post-test longitudinal design. Twenty-three adults were enrolled into the study, primarily from Asian, Hawaiian and other Pacific Islander populations. All were >30 years of age and had prehypertension or hypertension. Persons were excluded who were pregnant, incarcerated, planning to relocate from Hawaii, likely to have significant medication changes, or had increased risk for serious disease or death (such as those with terminal illnesses or enrolled in a hospice program). The study was approved by the University of Hawaii Institutional Review Board.

Recruitment

Methods of recruitment included fliers, announcements at public meetings, word of mouth communication and telephone calls, provider referrals, and booths set up at community events. Presentations were conducted at senior centers, health fairs, churches, shopping malls, dental offices, pharmacies, and a variety of other settings. The recruitment process was open to all adults regardless of their perceived level of spirituality, and no one was denied access to the study for personal views.

Procedures

At the initial visit, demographic, health, and spiritual profiles were com-

pleted by participants. Two spirituality questionnaires pertaining to each participant's sense of spirituality were administered at the start and the end of the study for pre- and post-test comparisons. Up to nine blood pressure measurements were obtained at approximately one-week intervals. The pre-test blood pressure readings began at enrollment, a time ≤45 days before the intervention class. Follow-up blood pressure measurements extended two months after the intervention. Participants scheduled appointment times for blood pressure assessments at prearranged meeting locations, such as senior centers and the local health clinic. If a participant missed a blood pressure measurement visit, follow-up phone calls were made to reschedule appointment times. The same investigator supervised all measurements and measured blood pressure for most participants.

At each appointment, participants were encouraged to rest for five minutes before the blood pressure measurements. They were instructed to sit quietly in a chair with their backs straight against the seat back, feet flat on the floor, and arm at heart level. An appropriate-sized bladder cuff encircling 80% of the individual's upper arm was used. Three measurements were obtained for each visit, and whenever possible, participants had their blood pressure monitored from the same arm at all visits. Participants were instructed to seek medical care if blood pressure was higher than normal or if they experienced symptoms such as chest pain, palpitations, dizziness, or visual changes. Throughout the study, participants were instructed to continue with their usual medical therapy and to maintain their regular diet and exercise patterns unless advised otherwise by their health practitioner. If a change did occur, participants were further instructed to note such changes in their study diary.

Variables

Blood pressure measurements were obtained using two automatic, digital, professional-quality blood pressure monitors. The accuracy of these devices met or exceeded SP10-1992 Association for the Advancement of Medical Instrumentation standards.[4,5]

Spirituality was assessed by using two questionnaires. The first, the Spiritual Orientation Inventory, is composed of 85 items on a seven-point Likert-type scale. The items reflect nine domains of spirituality,[6] and this questionnaire was chosen both because it measures spirituality alone and not religiosity and because it contains themes consistent with commonly occurring themes of spirituality. The second measure of spirituality was the Supplemental Spirituality Questionnaire. This instrument is composed of 14 scales on a seven-point Likert scale and a qualitative item, "Tell me how you feel about your own spirituality today." These scales measured each participant's sense of spirituality through inquiries regarding well-being, meaning and purpose in life, forgiveness, peace, and love.

Intervention

The study intervention Self Identity through Ho'oponopono was offered during a four-hour class. The instructor used a series of lectures, discussions, problem-solving interactions, sharing of processes or tools, and question-and-answer periods as teaching methods. Participants were taught simple processes, such as breathing exercises, prayers, and meditation. The participants were told they might incorporate them in their daily lives, but post-intervention practice was not required or monitored and was left to the participants' discretion.

Statistical Analyses

Blood pressure measures were analyzed using generalized estimating equations and were identified in the analyses as repeated measurements.[7,8] In the regression models, blood pressure was the dependent variable. An indicator variable, identifying if the measurement was taken before or after the intervention, served as the independent variable. Results from the models estimated the difference in pre- versus post-test blood pressure values. The models included four pre-post comparisons. As the primary objective, pre-intervention blood pressure measurements were compared to measurements taken over the two months post-intervention. In other analyses, pre- and post-intervention measurements were compared on the day of the intervention, and measurements taken during the first and second months after the intervention were compared separately to the pre-intervention blood pressure measurements. The scores generated from the two spirituality questionnaires were analyzed using paired t-tests.

RESULTS

Eighty-three percent of the participants were ≥50 years of age, 70% were female, 65% were Hawaiian or part Hawaiian, and 22% were of Asian descent (Table 1). All participants were long-term residents of Hawaii (≥6 years). No participants were pregnant, and none required the use of an interpreter. All of the participants were ambulatory, able to communicate verbally, and able to write independently. Thirty-five percent (8/23) reported a diagnosis of diabetes mellitus in addition to prehypertension or hypertension, and 9% (2/23) had a history of asthma. Six participants reported histories of other health conditions: prior myocardial infarction, pacemaker, cerebral vascular attack and mini-stroke (1); deep vein thrombophlebitis and Greenfield filter (1); bleeding (unspecified) (1); breast lump (1); epilepsy (1); and Meniere's Disease, obesity, hypothyroidism and alcoholism (1).

Fifty percent of participants reported involvement in some form of physical exercise; 26% reported they

Table 1. Demographic Characteristics at Enrollment

CHARACTERISTIC	VALUE*
Age (years)	59.5±11.2
Gender	
Female	16 (70%)
Male	7 (30%)
Ethnicity	
Hawaiian/part Hawaiian	15 (65%)
Asian	5 (22%)
Caucasian	2 (9%)
Other	1 (4%)
Weight (lb)	
Female	180±49
Male	235±92
Years living in Hawaii	47.6±19.4

* Values are given as mean ± standard deviation or *n* (%).

engaged in regular aerobic physical activity for 30 minutes daily (Table 2). Most reported healthy choices such as limiting their alcohol intake and consuming low-fat foods. Nearly all (87%) considered themselves active participants in their health care and indicated a desire to become more involved in their healthcare experience (91%). Seventy-four percent reported taking antihypertensive agents including diuretics, betablockers, angiotensin inhibitors, calcium channel blockers, angiotensin receptor blockers, or a combination of anti-hypertensive agents. Five participants reported antihypertensive medication changes: two reduced doses, two switched drug classes, and one initiated medication.

Participants were also asked about their spirituality with the meaning of spirituality left to individual interpretation. Most (86%) participants considered themselves to be spiritual; 22% viewed themselves as "totally" spiritual; 78% viewed their spirituality as "average." Recurring themes in the responses to the qualitative, spirituality-related question included a belief in a higher power and an affirmative awareness of spirituality. The participants all considered spirituality important to health.

The mean differences in repeated pre- and post-intervention blood pressures decreased significantly each month after the intervention of Self Identity through Ho'oponopono (Figure 1, Table 3). The mean systolic blood pressure was 7.83 mm Hg lower at the first month after the intervention and 11.86 mm Hg lower at the second month after the intervention. Similarly, mean diastolic blood pressure was 4.16 mm Hg lower at the first month after the intervention and 5.44 mm Hg lower at the second month. Mean blood pressure increased on the intervention day itself. Figure 1 illustrates the patterns of change for all of the systolic and diastolic blood pressure comparisons.

The spirituality measure increased ≈.3 units after the intervention. Results are based on scores of 21 of the 23 participants who completed both pre- and post-intervention questionnaires. The mean (plus or minus standard deviation) pre- and post-intervention scores of the Spiritual Orientation Inventory were 5.42±.81 and 5.70±.67(P=.02, 95% CI = 0.06, 0.51). For the mean pre- and post-intervention scores on the Supplemental Spirituality Questionnaire, pre-intervention scores were 5.67±1.23 compared to post-intervention scores of 5.98±.99 (P=.01, 95% CI = 0.09, 0.53).

Table 2. Health and Spiritual Profiles at Enrollment

Question	Reply	Frequency (%)
Spiritual Questions		
Do you consider yourself spiritual?	Yes	19 (86%)*
	No	3 (14%)
Please rate your level of spirituality.	About average	18 (78%)
	Totally spiritual	5 (22%)
Do you sense spirituality is important to your health?	Yes	22 (100%)*
Health-related Questions		
Do you smoke?	Yes	1 (4%)
Are you currently exercising?	Yes	11 (50%)*
Do you engage in regular aerobic physical activity for 30 minutes/day most days of the week?	Yes	6 (26%)
Do you limit alcohol consumption to no more than 1 oz (30 mL) of ethanol/day if male, and ½ oz. (15 mL) if female?	Yes	19 (83%)
Do you consume low-fat foods?	Yes	15 (65%)
Do you have a family history of high blood pressure?	Yes	21 (91%)
Are you taking prescription medication for hypertension?	Yes	17 (74%)
Are you actively involved in caring for your health?	Yes	20 (87%)
Would you like to be more involved in your healthcare treatments?	Yes	21 (91%)

* Frequencies are based on 22 of the 23 participants.

Discussion

Our results suggest that Self Identity through Ho'oponopono may have beneficial effects on blood pressure control. Mean systolic and diastolic blood pressures both decreased after the intervention. The magnitude of effect for these changes was comparable to those of published trials of an exercise intervention.[9–12] The repeated measures study design using participants as their own controls was chosen to avoid confounding by patient characteristics, which remained consistent over the study period. Examples of such characteristics include socioeconomic status, general health, and family structure. A smaller sample size was possible for this preliminary study using this approach than with a design requiring a control group. Furthermore, all participants were of-

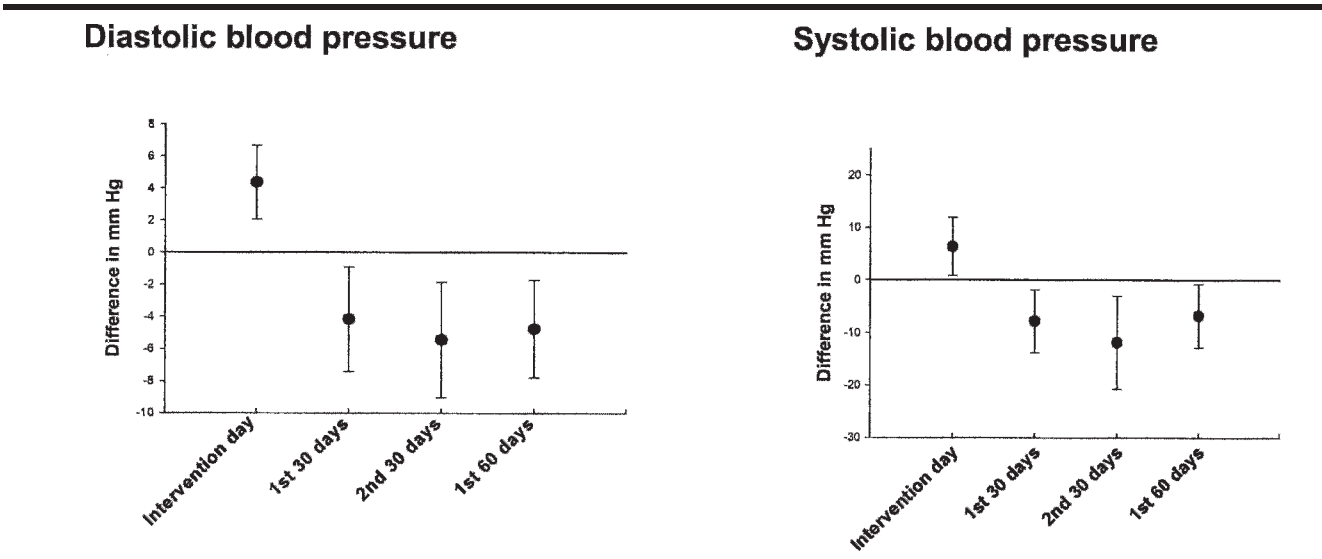

Fig 1. Illustration of post-test differences in diastolic and systolic blood

fered the intervention, which encouraged participation in the study.

Several limitations of the design, however, may have affected the results. With the pre-test versus post-test design, a regression to the mean could have occurred. Nearly all participants, however, had sustained high blood pressure before the start of the study. Participant selection for the study was not based on short-term hypertension measurements. To be sure, participants may have volunteered to participate in this spiritually oriented intervention study because of their partiality or beliefs in spirituality that could have directly contributed to its success. Another limitation is that 5 of 23 participants reported medication changes. These changes might have affected the results in either direction. Including a control group in future studies could minimize the potential bias, including those from potential regression to the mean and from medication changes.

In terms of the potential mechanism of action as to how this intervention may affect blood pressure and improve health, we speculate that a feasible reduction in stress is experienced through Self Identity through Ho'oponopono and may be mediated at the mental, physical and spiritual level (mind, body, spirit). Since the basis of Self Identity through Ho'oponopono is to relieve stress, this intervention may have resulted in lower blood pressure through a calming effect on normal physiology. Evidence suggests that chronic stress is associated with release of cortisol by the hypothalamus-pituitary axis, which can contribute to elevations in blood pressure and an imbalance in serotonin levels.[13] In addition, stress stimulates the nervous system to produce catecholamines, which can cause vasoconstriction.[14] Thus, a normalization of blood pressure may result through several mechanisms when stress level is decreased. Increased spirituality may be seen as a second benefit of the intervention. Whether the changes in spirituality scores and blood pressure are interrelated cannot be assessed by this pilot design.

Whatever the possible mechanism, Self Identity through Ho'oponopono was associated with a significant, clinically important reduction in blood pressure for two months after the intervention, with improved spirituality scores. Hypertension is a health disparity in a number of disadvantaged ethnic populations, and this intervention may be particularly relevant to individuals in Hawaii; these populations may be amenable to interventions they perceive as culturally appropriate.

Table 3. Differences in systolic blood pressure (SBP) and diastolic blood pressure (DBP) comparing pre- and post-intervention measurements

Post-Intervention Interval	Mean SBP Difference (95% CI.)	*P* Value	Mean DBP Difference (95% CI)	*P* value
All post-test measurements	− 6.81 (− 12.86, − 0.76)	0.03	− 3.51 (− 6.02, − 0.99)	0.01
Intervention day	6.35 (0.80, 11.90)	0.03	4.37 (2.05, 6.69)	0.001
First month post-intervention	− 7.83 (− 13.86, − 1.80)	0.01	− 4.16 (− 7.42, − 0.90)	0.01
Second month post-intervention	− 11.86 (− 20.77, − 2.96)	0.01	− 5.44 (− 9.03, − 1.85)	0.003

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Self Identity through Ho'oponopono can be easily scheduled into one's life, is noninvasive, low cost, readily accessible, and carries no known physiologic or social risks. An intervention that might lower blood pressure for people with prehypertension and hypertension, that leaves people with an improved sense of well-being while simultaneously conserving resources, deserves attention and critical appraisal. This intervention may also offer benefit to people with health conditions other than hypertension. A randomized clinical trial is necessary to validate these preliminary observations.

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AUTHOR CONTRIBUTIONS

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