Qigong and Hypertension: A Critique of Research

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Abstract

Research studies have pointed to various health-related positive effects of qigong; however, problems in much of the current qigong research methodology have limited interpretation of the potential benefits of qigong. Examples of research on qigong and hypertension are used to bring light to some of these methodological issues. In a review of thirty representative studies various areas of concern are addressed, including: the sources of studies, lack of random assignment, selection biases, treatment effects, placebo response issues, expectancy biases, blinded outcome assessment, adherence to treatment, reliability of blood pressure measurements, regression to the mean, publication biases, and lack of consistency of measurement. One of the longest term studies, conducted by Kuang et al (1991) and updated by Wang et al (1993) is examined in greater detail to illustrate these issues. This study took place over twenty years and reported significant differences between a group practicing qigong and control group in a variety of measures including a reduction of total mortality rate.

The weight of evidence suggests that practicing qigong may have a positive effect on hypertension. Further research will be required to better understand the effects of qigong exercises on health, and to assess the effects of integrating qigong into health and wellness programs in the west.

Introduction

We are in the midst of a revolution in health care where age-old healing methods from other cultures are now being integrated into the Western health care system (Eisenberg et al., 1998; Ornish, 1990 b; Zinn, 1990). Among the treatment methods being researched is Qigong, a practice that has existed for several thousand years and that invokes awareness, intention, breath, posture, movement, touch, and sound to cultivate qi, understood as the vital energy of life.

The purpose of this article is to first briefly review selected research on hypertension and the practice of qigong to evaluate qigongís potential efficacy as a treatment for hypertension. Secondly, methodological issues are discussed to guide future researchers in the field.

Hypertension affects 20% or more of the adult population in Western Societies and is a significant risk factor for stroke, myocardial infarction and congestive heart failure. These together account for more than 50% of deaths in the United States (Wollam et al, 1988). It is estimated that about 50 million Americans have elevated blood pressure (BP) which is defined as systolic BP of 140 mm Hg or greater, or diastolic BP of 90 mm Hg or greater (Joint National Committee on Detection, Evaluation and Treatment of High BP (JNC-V), 1993).

The disadvantages of conventional treatments that use medication include high costs and negative side effects in mood state, cognitive functioning and sexual performance (Polare et al., 1989; Medical Research Council Working Party, 1985; Kostis et al., 1990). Therefore, a growing body of research in the West has focused upon life-style modification as an alternative to hypotensive drugs. According to The Joint National Committee report (JNC-V, 1993), life style modification can provide ìmultiple benefits at little cost and minimal riskî and may be used as a first step therapy for hypertension or as a means of reducing the number and doses of hypotensive medications required (Little et al., 1991).

Review of Literature on Qigong and Hypertension

To survey the field the Qigong Institute of San Francisco's computer data base was searched. Seventy studies on hypertension were reviewed that came mostly from conference proceedings (Sancier, 1997). Other reviewed sources include various journal articles (Shih et al., 1998; Kuang et al., 1991; Wang et al., 1995, Sukuki et al., 1993), books (Cai, 1986; Chia, 1990; Chuen, 1991; McGee and Chow, 1994; Cohen, 1997), write-ups from qigong institutes (Xu and Wang, 1993), journals (Kuang, et al., 1991; Wang et al, 1995) and reports from peer-reviewed scientific journals (Sancier, 1996 a and b). Thirty representative studies were selected for review. All these sources (except

Zhang et al.,1993) report that in hypertensive patients, the practice of qigong positively affects BP, other blood flow measures, cardiovascular outcome measures and other aspects of health.

Blood Pressure

Many studies suggest that qigong lowers BP (Bornoroni et al., 1993; Huang, 1990; Jing, 1988; Kuang et al., 1989 and 1991, Li et al., 1988; Pan et al., 1990; Qu, 1990; Shih, et al., 1998; Tainjin et al.,1988; Wang et al., 1994 and 1995, Wu et al., 1993; Xu and Wang, 1994; Young 1998; Yuan et al., 1996). The most in depth of these studies is the Kuang study (Kuang et al., 1991, updated by Wang et al., 1994), which took place over twenty years. The basic design involved 204 patients with hypertension, randomly assigned to qigong practice and control groups. Age of subjects was not mentioned. Both groups were given anti-hypertensive drugs. The qigong group of 104 patients reportedly practiced 30 minutes twice per day, over 20 years.

During the first two months, the BP of all patients dropped in response to the hypotensive drug. Subsequently, and consistently over the period of 20 years, the BP of the group practicing qigong stabilized while that of the control group increased ($P<0.01$). Due to the stabilized BP, 48% in the qigong practice group reduced the hypotensive dosage, and for 30% in this group, the BP medication was eliminated. In contrast, 31% in the control group increased the hypotensive dosage (Kuang et al., 1991).

Other studies report that patients suffering from various degrees of hypertension can withdraw from their medication, and that BP reduced over various time periods: after one session (Li et al., 1988; Tianjin, et al., 1988), fourteen days (Wu et al,, 1993), two months (Jing et al.,, 1988; Tainjin et al., 1988; Shih et al., 1998; Yuan et al., 1996), and one year (Huang, 1990). Jing (et al., 1988) reports that for patients with a long history of hypertension and no satisfactory results with medication, BP stabilized within two months and three years after starting to practice qigong.

Other Blood Measures

In studies that were not specifically described as randomly assigned control group studies, significant differences were reported between qigong and control groups on eight blood flow measures (Chu et al., 1988), in ten indices of microcirculation ($P < 05\text{-}.01$) by (Wang C et al., 1995). At three major laboratories in China, Wang B, (et al, 1990) using a photoelectric earlobe sphygmograph that measures blood volume, reported a thirty percent increase in the group practicing qigong versus ordinary state ($P< .01$). Chai (et al, 1990) used a laser microcirculation blood flow meter to measure blood flow, and found an increase in experimental versus control group($P < .001$). Qu (et al., 1998) found blood flow resistance and vascular tension reduced in the

group practicing qigong versus the control group($P < .001$) even after one and one half hours of rest.

In randomly assigned controlled group studies, Kuang reports, in his twenty year study, less cardiovascular lesions ($P < .05$), decreased blood viscosity, improved platelet aggregation, decreased triglycerides and increased high density lipoprotein cholesterol (HDL-C, good cholesterolî) in the groups practicing qigong. Beneficial changes were reported in total peripheral vascular resistance, plasma cholesterol and in two messenger cyclic nucleotides (cAMP and cGMP) in the qigong compared to the control group (Kuang et al, 1991). Xian (1990) reports after six months of practice, the blood of the group practicing qigong, compared to the control group showed less tendency to form abnormal blood clots and contained significantly higher levels of HDL-C.

Other Cardiovascular Outcome Measures

A wide variety of other cardiovascular measures are reportedly improved by practicing qigong. Less congestive heart failure and acute myocardial infarction was reported ($P <.001$) by Xing (1991); but existence of control groups was not mentioned. A shorter comparative study (Kuang et al 1991: 157) was done on a randomly divided sub-grouping of 98 cases of hypertension accompanied by coronary heart disease. There was a comparable control group based upon age, gender and course of disease. Significant improvement was reported in the group practicing qigong compared to the control group in retinopathy ($P< .05$) and fewer cardiovascular lesions were found ($P < .05$).

In the latest update of the research of Kuang by Wang (et al., 1995), significant differences were reported in subjects who reportedly practiced qigong for 30 years, 30 minutes twice a day. The accumulated mortality rate was 25.41% in the qigong group and 40.8% in the control group. The incidence of strokes was also significantly different in the qigong practice groups as compared to the control group, 20.5% and 40.7%, respectively. The death rate due to strokes was 15.6% and 32.5% respectively ($P < .01$) (Wang, 1993 from Sancier, 1996).

Wang (et al 1995; Wang in Sancier, 1996:41) reported that after one year, many significant changes took place in a subset of eighty elderly hypertensive patients with Heart Energy Deficiency (a Chinese Medical Diagnosis), which often presents as a weakened function of the left ventricle and a disturbance of microcirculation. Researchers evaluated the results of qigong exercises on patients through measurements done by ultrasonic cardiography and indices of microcirculation. Subjects were divided into three groups: hypertensive patients with heart energy deficiency, without heart energy deficiency, and with normal BP. Left ventricular function (LVF)

improved in the group practicing qigong compared to the normal BP group (P <.05-.01), and other cardiac measures increased including ten indices of abnormal clinical blood conditions, for example blood flow and petechiae (fragile capillaries creating red dots on the skin) (P < .05). This study exemplifies problems related to regression to the mean, discussed in a later section.

Other Symptoms Reduced

Reports suggest qigong practice affects other chronic diseases and physical complaints associated with hypertensive states. Aching, distention, dizziness, and insomnia were reduced in a hypertensive group practicing qigong compared to a control group (Jing, 1988). In a group of chronic renal failure patients, swelling disappeared, and fatigue was reduced (Suzuki, 1993), attributed to qigong exercises. In the Kuang (1991) study, a sub-grouping of 16 male patients with hypertension associated with diabetes reportedly had, after six months of practice, significant reduction (P< .01) in symptoms of polydipsia (excessive thirst), polyphagia (overeating), polyuria (excessive urination), fatigue, weakness, blurred vision and hyperesthesia (skin sensitivity); and when forty patients from the qigong group were examined by ultrasound, they were found to have better left ventricular function.(Wang et al, 1995: Cohen 1997: 58).

Research Critique: Methodological Issues and Problems

Inadequate design makes the scientific validity of these studies difficult to determine. However, faulty methodology does not mean that the phenomenon under study is not worthy of further research. The methodological inadequacies of each individual study above will not be analyzed but rather, the focus of the next section is general themes, for illustrative purposes. The Kuang study (Kuang et al., 1991) has been selected as an example since it is one of the longest qigong studies and the methodology has been clearly described.

Source of Studies

The bulk of the studies reviewed have been collected for the San Francisco Computerized Database and, for the most part, come from proceedings from various qigong conferences. Some relevant data is missing, particularly from secondary reports. Many of the journal articles, reports from various qigong institutes, and books reviewed are difficult to assess methodologically, since these reports generally have not appeared in peer reviewed journals that adhere to accepted scientific standards of reporting.

Random Assignment

Of the many studies surveyed only five authors (Huang, 1990, Kuang et al., 1991; Li et al., 1990; Wang et al., 1994; Yuan et al., 1996) explicitly state that they used randomly assigned control groups. Without such random assignment, outcome measures are open to other interpretations, including habituation, seasonal effects, placebo response and changes in instrumentation.

Even in the randomly assigned control group studies, there can be other potential explanations for the reported results, such as, not including all subjects who were assigned in follow-up measures, isolating causes of reported treatment effects, patients' biases that arise because of expectancy of treatment effect, and lack of blinded outcome assessment.

Selection Biases

Even in studies where there was a randomly assigned control group, methodology of the selection process may be problematic. In the Kuang study, for example, although it is reported that patients with hypertension were randomly divided into a qigong and control group, specific relevant factors of the recruitment process were not mentioned. For example, we do not know how many people refused to participate, nor do we know when or how the random assignment was made. This makes it difficult to determine whether the two groups were similar at baseline.

These questions may affect the ability to generalize to the larger population and the external validity of the study. This problem may reflect a "population selection bias:, If some people selected for the qigong group refused to enter into the 30 minute twice a day practice, and were eliminated from the study, this could be because they were too sick, busy or tense. This could bias the results by eliminating the most unhealthy people from the treated group, and falsely increase the qigong practice groups' health outcomes. Likewise if some of the subjects initially selected for the control group wanted to practice qigong and were eliminated, this could eliminate the healthier controls.

Treatment Effects:

What are the results of the various studies actually measuring? In virtually all of the studies reviewed, including the Kuang (et al., 1991) study, we do not know whether the improved health of the qigong practice group was a function of qigong exercises, or some epiphenomenon associated with qigong practice, such as general physical exercise. In most of the studies (e.g. Huang, 1990; Kuang, 1991) there is not sufficient information to determine whether measurements took place shortly after qigong practice, and therefore whether improvements in BP or other blood flow measurements were lasting effects of qigong or a temporary result of movement and exercise.

Physical exercise is a possible source of explanation in the Wang B, (et al, 1990) sphygmograph blood volume study, which showed a thirty percent increase in qigong versus ordinary state (P <.01), and Chaiís (et al., 1990) finding of a significant increase in blood flow in experimental versus control group(P < .001). Other studies state that BP reductions and other blood flow measures were maintained between two months three years (Jing, 1988), and one to three years (Li et al., 1988) of practice. However, reports do not specifically mention how long after qigong practice measures where taken. In the Shih (et al., 1998) study it is stated that BP measures were taken after the study; but it was not stated how long after and whether qigong was practiced before measures were taken. A study that did take this variable into account was that conducted by Qu et al (1998) who found that blood flow resistance and vascular tension was reduced in qigong versus control (P < .001) groups, even after one and one half hours of rest.

In future research, it would be useful to add a control group who exercise but do not practice qigong. If this exercise group had less beneficial health results, a useful step would be made in ruling out exercise as a confounding variable. Also, it should be more clearly stated how long after qigong practice measures are taken to determine how long lasting are the results.

Two studies are of interest in this regard. First, the Journal of the American Medical Association recently reported on a study that Taiji, the most popular form of Qigong, helped to reduce falls amongst the elderly more than seven other different forms of physical exercise measured at eight different medical facilities (Province et al, 1995). Secondly, John Hopkins University researchers exploring whether exercise lowers BP needed a control group that did not exercise. They picked Taiji because they thought it was so slow that it would not effect BP (Young et al, 1998 unpublished). To their surprise, by the end of the 12 week study, BP of both groups dropped nearly the same amount. This latter study is important in factoring out certain expectancy biases inherent in studies done by Taiji advocates.

Finally, in terms of other alternative explanations for results, even in controlled studies, the validity of qigong could be better determined by giving both groups a questionnaire addressing diet, exercise regimens, possible differences in setting between the qigong and the control group, occupation, adherence to treatment (taking medication and practicing qigong) or other significant variables. The authors in the Kuang study did not report measuring differences with regards to such possible confounding variables between the two groups at the beginning, middle or end of treatment. Since there was reportedly a random division into experimental and control groups at the beginning of the study, this might mean that such variables were controlled; however a questionnaire could help determine the extent to which differences in health were related to qigong.

Placebo Response: Expectancy Biases and Double Blind Issues.

In behavioral research with humans, unlike animal or drug research, it is difficult to have a double-blind study, since the subjects usually know the group to which they belong, and the therapist knows which group is receiving treatment. With qigong research, qigong practitioners are aware that they are practicing a specific healing technique, and the qigong teacher/therapist knows that the qigong students are being treated. Thus, results of many of the studies cited could be based on placebo response rather than upon qigong per se.

A placebo response is a type of expectancy bias based upon the belief of the patient, the belief of the therapist and the interaction between the two. A well designed study attempts to tease out how much expectancy biases and the treatment effects, cause reported differences between the treatment and control groups. For example, if the qigong students had a teacher who showed them positive regard, or if students had a sense of mission and purpose to prove the efficacy of qigong as compared to a control group, these rather than qigong itself could have caused the reported differences. The Kuang study and others in the review of the literature (e.g. Chai et al., 1990; Huang, 1990; Jing, 1988; Qu et al., 1998) did not address this in the discussion section, nor did they attempt to control for these potential sources of bias.

Blinded Outcome Assessment

It was not reported in the Kuang study nor in other studies reviewed whether the data collectors were blinded to group assignment. This source of potential bias could be a source of conscious or unconscious skewing of measurements. In subsequent research, it should be reported whether the data collectors were blinded to group assignment.

The one study in our review which did address this issue was a Masters degree thesis from Columbia University's Program in Physical Therapy (Shih, 1998). To the credit of this study, the investigators taking measurements were blind to group affiliation, and baseline measurements were taken on each subject prior to treatment establishing a greater chance of validity of BP measurements. This study involved subjects who practiced qigong twice a week during an eight week period. Subjects reportedly showed significant decreases in systolic and diastolic BP, mean arterial pressure and respiratory rate. In this study a quality of life questionnaire and a subjective self-report questionnaire indicated improvements in many areas such as relief of chronic back pain, migraine headaches and insomnia, better ability to cope with life stresses, decreased anxiety, and increased peace and contentment. However, since the control group was taken from drop-outs of the study, the positive results could be explained by differences between groups in such variables as personality characteristics or health rather than qigong. Also, it cannot be

determined whether the treatment group's positive results are due to other variables such as exercise in general, group support, or general expectancy biases.

Adherence and the Dose Response Effect

The "dose response effect," i.e. that a greater dose of the experimental variable increases positive outcome, is important to consider in therapeutic studies. If we knew that people who practiced qigong for longer periods of time, or were more skilled, had increased health, this could increase our confidence in the effects of qigong.

In the Kuang (1991) study, how many in the qigong group actually practiced 30 minutes per day twice a day? The original research by Kuang did not specifically report how long the qigong practitioners practiced per day; however, Wang (et al 1993 reported in Sancier, 1996:41) reports that the qigong group practiced thirty minutes twice a day. Still, from this report we cannot be certain specifically how many subjects practiced this long. Among the people who died in the qigong group, did they practice more or less, or were they more skilled than those who lived longer? Were members of the qigong group eliminated from the analysis if they did not practice? How was adherence to the practice regimen assured? Since qigong in China is practiced by many millions of people, and is as common as aerobics in our culture, how did the researcher insure that the control group did not practice any qigong over a twenty year period?

An important part of an analysis of a clinical trial is called ìthe intention to treat principle, which means that to maximize validity, every patient assigned to a group must be analyzed, including those who dropped out at the beginning or during the course of the study. To the authors credit, and adding to the study's validity, they did address the issue of drop-outs during treatment. It was reported that 204 of the 218 cases (93.58%) were included in the study over the 20 year time line, and were continuously monitored and analyzed. The inclusion of this impressive percentage in the analysis lessens the potential of this selection bias.

Most of the studies reviewed do not mention how many subjects actually adhered to the practice regimen; and therefore it cannot be determined whether there was a dose response effect. If we knew this then it would be more likely that the qigong practice contributed to the treatment effects, rather than expectancy effects from being involved in a qigong group.

Chai (et al., 1990) did report a direct relationship between blood flow and the subjects' length and level of qigong training ($P < .001$), which is a dose sensitive relationship, but these researchers did not randomly assign a control group. Likewise Shih (et al., 1998) reports a dose response effect, but due to

the earlier cited problems with the selection of control group from drop-outs, alternative explanations could be posited for reported treatment effects.

Problems with Reliability of Blood Pressure Measurements

There are general difficulties in establishing reliable BP measurements in terms of establishing a stable baseline for any researcher. A subject's BP may fluctuate for a variety of reasons at different times, making analysis difficult. Many studies in our review do not adequately address this problem, though some studies have given attention to establishing stable baseline BP measures, and monitoring BP continuously over the course of the study (e.g. Shih, 1998). However, even in this study, it was not reported whether such measures were taken at times other than directly after the qigong meditation period. Such measures would help to determine whether meditative exercise itself is a confounding variable (i.e. whether qigong versus control groups temporarily reduces BP after exercise) or if qigong produces longer lasting effects.

Regression to the Mean

Studies which select subjects by extremely high or low levels of any variable have the methodological problem of follow-up measures having a general tendency to move toward the center. In the earlier cited Wang study (Wang et al, 1995; Wang in Sancier 1996:41), eighty aged hypertensive patients were divided into three groups: hypertensive patients with heart energy deficiency(HED), without heart energy deficiency, and with normal BP, and were given treatment targeted to increase heart energy deficiency. Left ventricular function (LVF), other cardiac measures and ten indices of abnormal clinical blood conditions improved (P,< .05) in the qigong group versus both control groups. However, the non-random division into groups of greater and lesser heart deficiency at the outset allows for regression to the mean to explain the positive results.

Regression to the mean could be a confounding variable in Xuís (et al., 1993) use of a pre- and post-test design in reports regarding patients with degeneration of the heart, brain and kidney functions, and senility, and their improvements in these functions.

Publication Bias

Any field of research is subject to publication biases. Studies that support a given treatment are published, while those that do not lend support tend not to be published. Most qigong studies report positive results. However, Zhang (et al, 1993) reported that a group practicing qigong had worse systolic and diastolic BP and heart rates after treatment.

Lack of Consistency of Measurement- Many Styles of Qigong

Further research needs to be conducted on the varied qigong traditions to determine which particular type or sequence of qigong movements may be most beneficial to a given patient at a given time. In any sample of the many qigong traditions (Cohen, 1997) each may focus upon various combinations or types of qigong: healing internal organs, stretching muscles, dispersing stagnant chi, tapping, breathing, making sounds, using pulsing movements, using qigong animal like movements, self-massaging, spiritual awareness exercises, and standing meditation. Qigong also uses non-movement to activate qi (Cai 1986; Chuen 1991; Diepersloot 1995; Ha 1996; Mayer 1997c).

We should be aware that qigong practices are not so easily oriented towards Western notions of prescribing a single pill or movement. Such an approach provides ease of scientific measurement, but does not fit into holistic Chinese medical philosophy which includes unique combinations of herbs, acupuncture and a wide variety of qigong movements suited to the individual whole person.

General Discussion

Although many of the studies of qigong practice and hypertension are flawed, controlling for the methodological biases listed above represents high expectations in any behavioral or clinical research. The methodological problems addressed above may account for some unknown portion of improved health outcome measures, but we should be circumspect before fully discounting positive effects reported in mortality rates, incidence of strokes and retinopathy (Kuang, 1991), and other positive outcome measurements in patients who have suffered from long term hypertension (e.g. Jing, 1988; Wu, 1993), or chronic renal failure (Suzuki, 1993).

In general, western hypertension research (COTA, 1978; Cohen, 1997: 345), as well as Chinese qigong studies, suffer from problematic research design. In an overview of hypertension studies, Rosen states, "methodological problems, such as small sample sizes and lack of experimenter-blind assessment, have limited the generalizability of results from most studies" (Rosen et al, in Gatchel (ED), 1998; Kaufmann et al, 1988; TOHP Collaborative Research Group , 1992).

Taken as a whole, many studies on hypertension do not address the criteria we outlined above for reasons as varied as difficulties inherent in behavioral research itself, lack of adequate training in research methodology, general issues cited above in BP measurements, lack of funding, and the orientation of the clinician to heal rather than measure.

The treatment effects of qigong on hypertension are worthy of note and are potentially profound in their implications. Qigong fits well into the

guidelines stated by a National Institutes of Health panel (NIHTAP, 1996) which concluded that ìintegrating behavioral and relaxation therapies with conventional medical treatment is imperative for successfully managing these conditions. “The panel did not endorse a single technique, but stated that a variety of them worked in lowering one’s breathing rate, heart rate and BP as long as they included two features: ìa repetitive focus of a word, sound, prayer, phrase or muscular activity, and neither fighting nor focusing on intruding thoughts.”

Eastern and Integrative Methods

Many Eastern methods of stress reduction have been used successfully with hypertension. Transcendental Meditation (TM) has been shown in well designed randomly assigned studies to positively affect the BP of hypertensives (Schneider et. al., 1995, Alexander et al., 1996). Other TM studies demonstrate significant changes in BP were even measured at times other than during the meditation period (Benson et al, 1973). Positive results have been claimed in combining vipassana meditation and stress reduction techniques at the University of Massachusetts Medical Center (Zinn, 1990). When yoga was integrated into an intensive multifaceted lifestyle change program with a low fat, low cholesterol vegetarian diet, daily meditation, moderate aerobic exercise and group support, hypertension and coronary disease were reduced (Ornish et al., 1990 a and b).

Like yoga (Ornish et al., 1990a) and other Eastern relaxation methods which have reported beneficial results in treating hypertension, qigong is a tradition that combines relaxation, breathing and a mindful relationship to body awareness. Further research could compare yoga, qigong, exercise and other relaxation and/or meditative traditions. Each different Eastern meditation modality may have its own advantages and disadvantages for different patients. For example, yoga may be the most appropriate exercise for patients who cannot stand, while qigong may be more beneficial for Type A, sedentary office workers who would benefit from movement. For those who would most benefit from mantra yoga, TM may prove appropriate, while those who are overly intellectual and stressed may benefit from the bodily orientation of qigong .

Qigong has the advantage for elderly hypertensives of being low impact, and therefore potentially less dangerous compared to traditional aerobic exercise (Province, 1995). In general, a variety of factors could be considered in a given patient’s choice of exercise at a given time, such as physical limitations, availability, suitability of a given instructor, life circumstances, or basic beliefs.

Finally, whether qigong alone can affect hypertension is not necessarily the most important question to be answered. Multifaceted programs (JNC -V

1993; Kostis et al 1992; Little, 1991; Ornish et al, 1990; Rosen et al., 1989) which integrate diet, aerobic exercise, relaxation techniques, social, hypnotherapeutic, and psychological dimensions may be effective in treating hypertension. For example, the Heartsavers Lifestyle Program (Rosen et al, 1989) treated middle aged and elderly hypertensives and found the greatest improvements in middle aged and elderly hypertensives who followed a multifaceted program as compared with a medication and placebo control group. Quality of life also improved based upon the patientsí reports of increased energy levels and improved sexual performance compared with both drug and placebo (Rosen in Gatchel (Ed) 1998:91).

Western psychotherapeutic and hypnotherapeutic methods have been used successfully with hypertensive patients (Benson, 1983 a and b; Crasilneck et al 1985; Yanoviski, 1962). The energetic dimension has long been advocated as a significant part of body-mind healing in the West (Reich 1949; Lowen 1958). It may be a useful next step to add qigong methods to this tradition. Further research has been suggested (Mayer, 1994, 1996, 1997 a, b and c, 1998) with hypertensive patients to explore and validate the integration of psychological methods such as hypnosis, self-soothing, visualization, psychodynamic interventions, cognitive restructuring. Additional research recommendations include focusing on the felt meaning of oneís hypertension (Gendlin, 1978), qigong techniques such as microcosmic orbit breathing (Wilhelm,1962) and other Taoist qigong breathing methods, touching of acupressure points (Gach, 1990), and belly massage from chi nei tsang (Chia, 1990).

As a practice that integrates relaxation, meditation and exercise, qigong could play a potential role in multifaceted interventions. Doctors (Maisel, 1963) and medical hospitals, such as California Pacific Medical Center in San Francisco and Columbia Presbyterian Hospital in New York, are increasingly using qigong for their cardiology patients (Motz, 1997).

Conclusion:

Qigong appears to help in the treatment of hypertension, but due to inadequate addressing of methodology issues it is difficult to determine just how effective qigong is, and what other factors may contribute to its positive effects.

We hope that Western researchers join hands with those in China who are investigating qigong, since the world may benefit from further studies to establish whether or not qigong may provide a beneficial adjunct to other treatments.

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