Update on Qigong Practice and Qigong Research in the United States

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Qigong, as part of traditional Chinese medicine practice and a complementary-alternative healing approach, has received increased attention and interest in the United States. This fact brings up some important questions for the academic study of Qigong, not all of which have easy answers. How many people are practicing Qigong in the U.S.? Who are they? What kind of scientific research has been funded by the National Institutes of Health (NIH) and the US Government to understand Qigong and its applications? What are the major findings in these Qigong-related research projects? This report updates information on these challenging questions with reliable research data and updated survey estimates. We have conducted an intensive search of internet databases and published studies, and we can now provide a unique and interesting update on the scope and diversity of Qigong practice and Qigong research in the United States.

I. Qigong Practice in the U.S.

How many people are practicing Qigong or mind-body exercises in the U.S.? This is a very challenging question. Four years ago, I reported such an estimate based on the 2002 National Health Interview Survey (NHIS, an annual household health survey by the Center for Disease Control and Prevention, a.k.a. CDC), which included a special Alternative Health /Complementary and Alternative Medicine (CAM) supplement with the Sample Adult Core component, and the Family Core component. In 2007, the CDC repeated this supplement (with the support of the National Center for Complementary and Alternative Medicine). This offers us an updated picture on how many adults in the U.S. are using mind-body therapies and other CAM practices. The supplemental questionnaire included questions on 27 various types of CAM therapies commonly used in the U.S. in 2002, but expanded to 36 CAM therapies in 2007, including Qigong and many other Qigong-related mind-body exercises, such as Tai Chi, deep breathing exercise, Yoga, Meditation, and guided imagery. A total of 31,044 adults, age 18 years and over, were interviewed for this CAM supplement in 2002; and that number was 23,939 in 2007, representing a sample adult response rate of 74.3% in 2002, and 67.8% in 2007. According to the most recent report based on this survey, about 625,000 American adults (0.3%) have practiced Qigong in the past 12 months, an 18.6% increase over 5 years ago (see Table 1).

Some people may not understand why mind-body exercises like Yoga, guided imagery and deep breathing exercise can be considered to be types of Qigong. Therefore, I would like to clarify my concept/definition of Qigong. "Qigong" is really a broad Chinese concept that covers a variety of energy therapies and mind-body exercises, as it is defined in medical qigong textbook in China, "Qigong refers to the skill of mind-body exercises that integrate the adjustments (regulations) of body, breath, and mind into One."(Liu & Chen, 2010). Historically, the mind-body exercises we call "Qigong" today, have been called many different names by different traditions or schools. Those well-known terms include: "Tu-na" (吐纳, exhalation and inhalation,)

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"Jin-zuo" (静坐, sitting meditation), "Cun-shi"(存思, mental visualization) , "Guan-xiang" (观想, observing imagination), "Dao-yin" (导引, guiding and conducting exercise), "An-qiao" (按蹻, massaging or stepping on the body), and "Zuo-wang" (坐忘, sitting and forgetting). Today, all meditations and mind-body integrative exercises are being called "Qigong" in China. More specifically, Reiki was originated from one of the Chinese medical qigong traditions, and Zen is one of the major Buddhist Qigong traditions. Yoga could be called Indian Qigong or Buddhism Qigong in China. In the broad sense, we would consider Reiki, Yoga, meditation, guided imagery, and deep breathing exercise in this category. This yeilds a much larger proportion of users or practitioners in the U.S. About 19% of the population have practiced one form or other "Qigong" in the past year. (Note: These categories are not exclusive, and many people practiced more than one form).

Table 1. Frequencies and percents of adults 18 years and over who used complementary and alternative medicine by type of therapy: United States, 2002 and 2007

	2002		2007		Change
Type of Mind-Body therapy	Number in thousands	Percent (s.e.)	Number in thousands	Percent (s.e.)	Number in thousands (%)
Qigong in Narrow Sense					
Qigong (气功)	527	0.3 (0.04)	625	0.3 (.0.04)	+ 98 (18.6%)
Tai Chi (太极拳)	2,565	1.3 (0.08)	2,267	1.0 (0.08)	-298 (-11.6%)*
Energy healing/Reiki (l (灵气)	1,080	0.5 (0.05)	1,216	0.5 (0.06)	+136 (12.6%)
Qigong in Broad Sense					
Deep breathing exercise (吐纳)	23,457	11.6 (0.24)	27,794	12.7 (0.30)	+4,337 (18.5%)*
Yoga (瑜伽功)	10,386	5.1 (0.16)	13,172	6.0 (0.21)	+2,786 (26.8%)*
Meditation (静坐)	15,336	7.6 (0.20)	20,541	9.4 (0.27)	+5,205 (33.9%)*
Guided Imagery (观想)	4,194	2.1 (0.10)	4,866	2.2 (0.16)	+ 672 (16.0%) *
* $p < 0.01$					

If we compare the numbers in 2007 with those in 2002, we will find that there have been increases in most forms of mind-body exercises in the past 5 years, except for Taiji, which experienced some decrease in practitioners. The largest increase occurred in meditation, with 5 million more people practicing, or a 34% increase. The next largest increase occurred in Yoga, with 2.8 million more practitioners, or a 27% increase over the past 5 years. In addition, there is an 18.5% increase of Tu-na practitioners, a 16% increase of Guan-xiang practitioners, and a 12.6% increase in people who used Reiki or energy healing. This is really a very impressive upward trend in the past 5 years.

The 2007 NHIS included a new survey on children under 18 years of age who used CAM therapies in the past 12 months. With a nationally representative sample of 9,417 children aged 0-17, the highest proportion of mind-body exercise among children was deep breathing exercise (1.56 millions or 2.2%), the next was yoga (1.5 millions or 2.1%), followed by meditation (725 thousands or 1.0%).

Who were those people who practiced these mind-body exercises? Table 2 presents the demographic characteristics of those who used selected mind-body therapies in 2002 and 2007.

Table 2. Age-adjusted percents of adults (18+ years) who used selected CAM categories during the past 12 months, by selected characteristics: United States, 2002 and 2007.

	Any use of Mind-body therapies (%)	
Selected Characteristic	2002	2007
Total	16.9 (0.31)	19.2 (0.38)
Sex		
Male	12.5 (0.36)	14.4 (0.44)
Female	21.1 (0.42)	23.8 (0.53)
Age		
18-29 years	17.7 (0.62)	21.3 (0.92)
30-39 years	18.3 (0.57)	19.9 (0.81)
40-49 years	18.9 (0.59)	19.7 (0.81)
50-59 years	19.6 (0.67)	22.9 (1.00)
60-69 years	14.4 (0.70)	17.3 (0.88)
70-84 years	9.4 (0.58)	11.9 (0.69)
85 years and over	6.4 (1.14)	9.8 (1.58)
Race		
White or Caucasian	17.0 (0.35)	21.4 (0.49)
Black or African American	14.7 (0.69)	14.8 (0.76)
Asian	20.9 (1.67)	23.3 (5.68)
Education		
Less than high school	8.0 (0.46)	7.6 (0.56)
High school graduate/GED	12.4 (0.46)	12.1 (0.53)
Some college – no degree	19.1 (0.60)	22.0 (0.84)
Associate degree	20.2 (0.92)	24.3 (1.26)
Bachelor degree	25.0 (0.79)	25.5 (0.85)
Graduate degree	26.5 (1.55)	34.2 (1.34)

Similar to the previous report, females are more likely to use CAM mind-body exercises than males; and educated people are more likely to use mind-body therapies than less educated people. All age groups have reported increased proportion of use. A greater percentage of Asian-Americans than other races reported using mind-body exercises, and both Asian and White races reported a significant increase of use in the past 5 years, but not so among African Americans. This survey indicated that Hispanics use mind-body exercises the least (10.6%). In addition, those with private insurance are more likely to use CAM mind-body exercises (22.0%) than those with public insurance (18.7%) or those without insurance (16.2%). Those who have been hospitalized in the past year are more likely to use mind-body exercises (23.7%) than those who have not (18.8%); and those who delayed conventional care because they could not afford it were more likely to use CAM mind-body exercises (27.7%) than those who did not delay care (18.2%). The more unhealthy conditions one has, the more likely she/he would use some form of mind-body exercises (range from 9.8% in those with 0 unhealthy condition, to 16.2% in those with 1-2

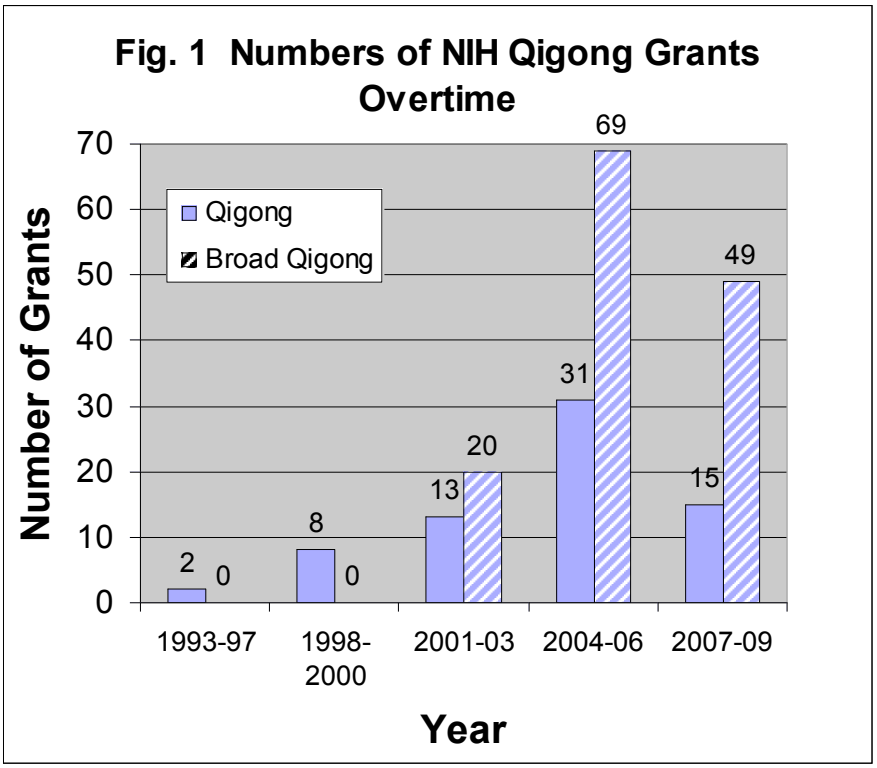
unhealthy conditions, to 30.6% of those with 6 or more conditions). People on the West Coast tended to be more likely to use mind-body exercises (23.2%) than in other regions, while people in the South are least likely to use mind-body exercises (15.0%).

For complete reports of the CDC NHIS, please go to web site:
http://www.cdc.gov/nchs/data/nhsr/nhsr012.pdf

II. Scientific Research of Qigong

This is an update to my previous report of Qigong practice and Qigong research in the U.S. a few years ago (Qi Dao, 2006). In general, it is very difficult to provide an objective, current, and complete picture of the continuously evolving scientific research related to Qigong as a healing tool or treatment modality, because there are no organizations set up to compile this information in the United States. A summary of published studies may be one way to draw a general picture of the field; and the Qigong Institute has tried to do so in the past decade by putting together the "Qigong and Energy Medicine Database" (Sancier, 2001), which currently includes 5800+ entries or abstracts, mostly Qigong studies. There are some good literature reviews on Qigong and Reiki studies as well (Sancier, 1996; Miles & True, 2003; Ng & Tsang, 2009; Jahnke et al. 2010). However, as I will discuss below, many funded scientific studies of Qigong have not generated a scientific publication for various reasons. Therefore, this report will summarize the National Institutes of Health (NIH) funded grants in this area to offer a relatively objective picture of the current scientific study of Qigong in the U.S.

The major NIH web sites (NCCAM, Clinicaltrial.gov & REPORTER) were searched thoroughly for a history of grants funded for the scientific study of Qigong or related mind-body energy therapies. In this report, we divided Qigong into two categories to fit into most people's perception of mind-body medicine: In a narrow sense, Qigong includes Qigong, Tai Chi, Reiki and pranal healing; in a board sense, all meditations, deep breathing, yoga and guided imagery practices would be called Qigong in China. As reported previously, the earliest NIH grant we could find was back in 1993, when NIH funded one pilot clinical study of external Qigong therapy for late stage reflex sympathetic dystrophy by Dr. Wu at UMDNJ (randomized trial with placebo control), and one pilot study on Tai chi for balance disorders by Dr. Hain at Northwestern University. Both investigators are medical doctors, and both studies reported some significant positive improvement



in patients under Qigong treatment. Dr. Wu published his results in 1998 (in ATHM), and Dr. Hain did not.

By the end of 2009, there have been a total of 74 NIH grants to support the study of Qigong (Qigong, Tai Chi and Reiki), and other 152 grants for study of Qigong in the broad sense (meditation, Yoga & deep breathing exercises). Figure 1 presents the number of grants funded in different time periods.

The majority of the NIH grants for mind-body exercise or therapies have been very recent, since 2001, and have been funded by the newly formed National Center on Complementary and Alternative Medicine (NCCAM) at NIH[2]. This type of funding was peaked in 2004-06. There were 36 NIH grants for Qigong and related mind-body exercises in both 2005 and 2006, the highest in the NIH history.

In general, there has long been a lack of resources or interest in supporting scientific exploration of Qigong and other mind-body energy therapies from the western medical research community, recent increase in funding for mind-body exercise and medicine reflects both more scientists are involved in serious study in this area, and the need from consumers to know the efficacy of the mind-body medicine in clinical applications..

NCCAM had an annual budget about $120-130 million in the past few years, which is much better than 5 years ago, but still only about 0.5% of the total NIH budget. They have to distribute this limited budget to support the scientific studies of all CAM therapies and healing modalities, to include botanicals, homeopathic medicine, acupuncture, biofeedback, manipulative and body-based practices, and all other unconventional medicine and therapies. Qigong and mind-body energy therapy is really a very small part of the NCCAM-sponsored projects. The competition for grant money is very high and the availability of funds is very limited. A summary of these existent NIH-funded projects on Qigong and related mind-body energy therapies is as follows:

- One third of these grants (34%) were exploratory and development grants (R21 or R03) with a small budget ($100K to $300K); about 22% were normal NIH investigator initiated grants (R01 or RC1), 13% were part of the center grants (P, U or M), and 19% are training or career development grants (K, T & F).
- The majority of these NIH-funded research projects were clinical studies (90%), very few were laboratory studies (basic science) or educational or training grants.
- Among the 17 NIH grants with Qigong as one of the therapies, nine were using external qi therapy, and all projects of Reiki (n=9) were also considered external bio-energy therapy. It seems that NCCAM was extremely interested in verification of the effect of external bio-energy in the past few years, even though the essence of Qigong therapy is self-care or self practice.
- In terms of type of disease targeted in clinical studies of mind-body energy therapies, Table 3 offers a quick summary: In addition to general study of CAM therapies (ethno-medicine), chronic pain attracted the highest number of energy-medicine grants (13.3%);

[2] NCCAM was started in 1993 as OAM, the Office of Alternative Medicine, and it started giving out grants then, but became a full Institute within NIH, and got the name change to NCCAM in 2001.

cancer is the next (12.9%), followed by neurological disorders (10.5%, cardiovascular disease (9.1%), and stress management (9.1%).

Although there are only a very small number of scientific studies in Qigong and energy medicine in comparison with other established disciplines, this is a very exciting and significant level of activity at the highest institutions of scientific research. It signals the beginning of the new era in which the traditional concept of qi or mind-body medicine has formally been put under the microscope of modern science, and indicates the start of a joint effort between conventional western medicine and CAM therapies for better human health and more effective healing. When we recruited subjects for our NCCAM-funded project, Qigong therapy for osteoarthritis of the knees, we received many phone calls asking if this study was actually a hoax, and many people could not believe that a medical school was seriously conducting a randomized clinical trial to test this ancient therapy.

Table 3. Types of Diseases Targeted in Clinical Studies of NIH-funded Energy Medicine Projects

Type of Diseases	Qigong	Broad Qigong	Total	
			#	%
Addiction (drugs or smoking)	2	12	14	6.7%
Anxiety and depresson	1	6	7	3.3%
Cancer and tumors	12	15	27	12.9%
Cardiovascular disease	6	13	19	9.1%
Chronic or musculoskeletal pain	10	18	28	13.4%
Ethnomedicine	19	18	37	17.7%
HIV/AIDS	2	4	6	2.9%
Immune modulation/enhancement	5	9	14	6.7%
Inflammatory bowel disease	0	3	3	1.4%
Insomnia	2	3	5	2.4%
Neurological disorder	8	14	22	10.5%
Obesity/metabolic Syndrome	4	14	18	8.6%
Respiratory disease	1	3	4	1.9%
Stress/stress management	3	16	19	9.1%
Total	73	136	209	

However, the outcomes of the NIH-funded studies are not all positive or confirmative of the therapies under investigation. Among the completed studies funded by NIH (about 2/3 of the studies in the list), we located published articles for only one third of them after a thorough internet search, which suggests that quite a few studies may not have produced the expected positive results, or could be what we call a negative study. The future of scientific study of energy medicine may not be as optimistic as most of us would expect since the NCCAM is under tremendous pressure to produce positive findings for these therapies with the taxpayers' money, while funded studies have not done so consistently

A recent systematic review by Jain and Mills (2010) examined 66 clinical studies with a variety of biofield therapies (such as Qigong, reiki, and healing touch), and found that most of the studies are of medium quality, and generally meet minimum standard for validity of inferences. "The biofield therapies show strong evidence for reducing pain intensity in pain population, and moderate evidence for reducing pain in hospitalized and cancer population. There is moderate evidence for reducing negative behavioral symptoms in dementia or anxiety for hospitalized populations. There is equivocal evidence of effects on fatigue and quality of life for cancer patients, as well as for comprehensive pain outcomes and affect in pain patients…"

In short, there has been an increased interest in understanding qi healing and Qigong therapy in the U.S., and an increasing number of research projects have been funded by NIH in this area. There are increased evidences in clinical applications of Qigong or mind-body exercises for general health (such as stress management) or for treatment of certain conditions that western medicine has problem to deal with. However, we need more researchers and more resources involved in the scientific research of Qigong therapy and mind-body exercises so as to make it part of the mainstream medical therapies and the daily well-being practice.

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