The Effect of Intention on Decreasing Anxiety and Depression Utilizing Intention Imprinted Devices

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The work reported in this thesis is original and carried out by me solely, except for the acknowledged direction and assistance gratefully received from colleagues and mentors.

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ABSTRACT

Two experiments, one double blind, were conducted to explore the effects of intention on anxiety and depression utilizing an Intention-Imprinted Electronic Device (IIED) on adult subjects throughout the Central United States, Canada, and Mexico. Subjects were divided randomly into two groups, with demographic information from each entered on one of two computers. The IIED was imprinted by four experienced meditators with an intention for improved health, decreased anxiety and decreased depression. The intervention group scrolled continuously in the vicinity of the IIED broadcasting the intention. At a separate location, the control group demographics scrolled continuously with no intention. The interventions were conducted at three month and eight month intervals.

Results were compared using a mixed analysis of variance with one between groups and one within groups factor on the pre-and post-test scores on the State-Trait Anxiety Inventory for Adults and the Zung Self Rating Scale for Depression. The results for the three month group showed a marginally significant reduction on the STAI-Y-1 for the intervention group at the .089 level of significance. The control group showed no significant variance. The analysis of the pre-intervention scores to the post intervention scores after both the three and eight month group showed a significant reduction state anxiety ($p=<.003$), trait anxiety ($p=<.000$) and depression ($p=<.001$).

The results suggest that over time, an intention broadcast to adult subjects may have an impact on anxiety and depression. More research needs to be conducted to explore the potential of IIEDs to improve health.

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INTRODUCTION

The state of American health is declining, and the healthcare system is in crisis. Healthcare in the United States, while touted by Americans as the best in the world, is dysfunctional, costly, and a burden on the economy that threatens to bankrupt us.[1] We need new solutions to the problems and issues that are outside the widely accepted medical model, solutions that take advantage of advances in other areas such as science and spirituality. Health is not an isolated physical condition, as depicted by the current medical model, but is an intertwined and interdependent blend of physical, emotional, social, spiritual, and environmental determinants. Health is an issue that is critical not only to the well being of our citizens, but to our economy and our way of life as well.

The Cost of Healthcare

Currently healthcare costs comprise one sixth of our national economy and consumed 15.4% of our Gross National Product in 2003[2], a higher percentage than any other major industrialized nation[3], and up from 7% thirty years ago.[4] In contrast, education spending as a percent of the Gross National Product has remained steady during that same time period at 6%.[5] In 2003, 45% of the costs of healthcare were borne by public programs like Medicare and Medicaid, which is predicted to increase to 49% by 2014. Another 40% of the cost of healthcare is borne by business: General Motors reportedly spends $1,400 per vehicle to provide healthcare for its employees and retirees, more than the cost of the steel. [6] Some predict that in nine years, by 2014, we will spend 3.6 trillion dollars on healthcare, or 19% of the U.S. economy.[7] As of the mid-1990's, the federal government was spending 20% of its budget on healthcare.[8] Still, a large part of

the problem, identified by the Tufts Managed Care Institute, is the healthcare systems' increasing capacity to provide care which is not necessary or beneficial, and is of marginal utility.[9]

The system that costs so much is also the leading cause of death in America: iatrogenesis, not heart disease or cancer, kills more of us than anything else.[10] Bartlett and Steele explain how we spend more money and have less to show for it than other developed countries:

> We don't adequately cover half of the population. We encourage hospitals and doctors to perform unnecessary medical procedures on people who don't need them, while denying procedures to those who do. We charge the poor far more for medical services than we do the rich. We force senior citizens with modest incomes to board buses to Canada to buy drugs they can't afford in America. We clog our emergency rooms with patients because they can't get in to see their doctors. We spend more money treating disease than preventing it. We are victims of rampant fraud and over billing. We stand a good chance of dying of a mistake if we are admitted to a hospital, and we kill more people with prescription drugs than with street drugs like cocaine and heroin. We have an endless choice of healthcare plans, but most people have few real choices. We are forced to hold bake sales, car washes, and pancake breakfasts to pay the medical bills of family members when a catastrophic illness strikes.[11]

It is a complicated, multi-interest system where the business incentives are aligned to keep people unhealthy.[12] People are beginning to seek alternatives to the current system, and utilizing their own resources to improve their health. According to Paul Zane Pilzer:

> Approximately 1.4 trillion dollars a year is dedicated to the "healthcare industry", while another 200 billion this year will be spent on what are commonly referred to as wellness products. It is projected that by 2010, the "wellness industry" will be an additional 1 trillion dollars of our US economy. Yet, 85% of individuals finance their medical care through a system of insurance that absolves them in large part from any direct responsibility for their medical expenses while disallowing any preventative services for reimbursement.[13]

Healthcare costs to employers are skyrocketing in this system, and the proliferation of HMO's and managed care, as a way to control costs, has been the beginning of the end of the free-for-all system of care. Health insurance plans attempt to control costs by restricting access to providers, eliminating costly treatment benefits, requiring pre-approval for care that meets medical necessity criteria, restricting access to certain medications through "approved formularies", charging higher deductibles and co-payments for services, as well as increasing health insurance costs to the employee. These have all failed to impact the rising cost of care.

Paradoxically, as technology advances and systems of care proliferate, as interest in maintaining and improving health increases, and the appeal of complementary and alternative medicine grows, the health of our nation seems to be declining instead of improving. In June of 2004, Time Magazine reported that one of the latest health

epidemics to strike the American people is the 'Epidemic of Obesity'.[14] Despite the proliferation of nutrition and exercise information, as well as health risk information available, in 2004 over one half of all adults in the U.S. are overweight, and one half of those are officially obese.[15] By 2005, only 30% of Americans identified themselves as overweight or obese, while the Health and Human Services Department of the Federal Government classified 64% of Americans as overweight or obese.[16] Starfield found 40% of the American population — 100 million people — to be suffering from serious chronic disorders.[17] While some, such as Tufts Managed Care Institute[18] and current political candidates tout the healthcare system of the United States as offering the highest quality of care in the world, the reality is that 15% of Americans have limited or no access to healthcare because they are uninsured. In addition, the United States falls behind other industrialized countries in population based healthcare measures such as life expectancy and infant mortality.[19] Iatrogenesis is now the leading cause of death in the United States. In their definitive reviews of medical journals and government health statistics, Null, Dean, Feldman, Rasio, and Smith found:

> …that American medicine frequently causes more harm than good. The number of people having in-hospital, adverse drug reactions (ADR) to prescribed medicine is 2.2 million. Dr. Richard Besser, of the CDC, in 1995, said the number of unnecessary antibiotics prescribed annually for viral infections was 20 million. Dr. Besser, in 2003, now refers to tens of millions of unnecessary antibiotics. The number of unnecessary medical and surgical procedures performed annually is 7.5 million. The number of people exposed to unnecessary hospitalization annually is 8.9 million. The

> total number of iatrogenic deaths is 783,936. It is evident that the American medical system is the leading cause of death and injury in the United States. The 2001 heart disease annual death rate is 699,697; the annual cancer death rate, 553,251.[20]

Yet, our research dollars, institutions of higher learning, the government, and private organizations do not focus on finding a 'cure' for the sickness that is our healthcare system, but instead concentrate on diseases like cancer and heart disease. Overall, therefore, while there is lots of care being produced, it seems to be making us worse, not better. Clearly a change is needed if we are going to stay healthy and not bankrupt the country. But where to start?

The Problem

There are five principal parties in the healthcare system: consumers (clients), government, insurers, providers, and the legal system. Each plays a key role in maintaining not only the dis-ease of the system, but of our declining health as a nation. Though we call it an industry, the healthcare system it is really not structured like the other industries in a free market economy. In a free market economy, consumers and sellers of a product come together with the benefit of competition.[21] In health care, the consumer is not really the purchaser. There are two purchasers of healthcare: employers, who purchase health care insurance from payors, and the government, which purchases care for its Medicare and Medicaid programs from providers. Employers and the government provide coverage for 85% of the population.[22] The government mandates the price it will pay providers, based on complex formulas that providers can't understand. Payors (who provide coverage to employers), who understand that the government prices

are the lowest that providers will accept, try to negotiate prices as close to the governments rates as possible. The providers have no ability to negotiate with the government on pricing or scope of services covered, but they do negotiate with payors individually. Of course, providers, who have no option but to accept government prices, want to increase prices to the payors, so that they can maintain profit margins. The providers set charges for their services; however, the payors negotiate discounts on the charges. In reality, the only people who actually pay what the providers charge are the 15% of the American population with no insurance.[23] The purchasers of healthcare (employers) are precluded from negotiating collectively with providers (the rules and regulations of the healthcare system make it cost prohibit for employers to do this), which means the payors have significant control. As long as the payors can charge purchasers more than they pay providers, they have little incentive to invest in new methods of health care provision. Providers, who are receiving discounted fees from payors, and deeper discounted fees from the government, also have little incentive and few resources to improve efficiencies or contain costs.

Managed care has attempted to control costs through capitation arrangements, in which providers are given lump sums to provide care for a group of people or for a set of services to a group. In theory, this gives providers an incentive to control the direction and costs of care. However, consumers now have an entitlement mentality because they have been taught that their insurance will pay for whatever they need. Consumers are insulated from the costs of care and have been trained by the system to expect that they can have whatever services they need while their insurance coverage lasts. This has begun to change recently, as employers have had to cut benefits or implement cost

sharing strategies (such as deductibles, co-pays, and co-insurance) to attempt to deal with the rising cost of healthcare. However, consumers continue to demand what they perceive to be high quality in health care, much of which they learn about from television, advertising, and the internet. This puts providers in the position of explaining to consumers what is truly needed from a medical perspective and what is not. Yet providers have been trained to make treatment recommendations based on what a consumer's insurance would pay for, and have not risen to the challenge of managed care: that providers would actually manage the care of the consumer. The interesting thing is that in our healthcare system, the definition of quality healthcare actually comes from the healthcare system itself. Pharmaceutical companies, insurance companies, healthcare systems and their suppliers, and powerful professional organizations through their advertising campaigns and lobbying of the public and legislature(s), all define quality healthcare in terms that protect their own parochial interests and profits.

In our system, if a consumer perceives that quality services were not rendered, s/he can turn to the court system and use legal recourse to make the provider, insurance company, or health institution pay monetarily for the perceived mistake. Thus, the legal system and lawyers in particular are also beneficiaries of the structure of our healthcare system. Healthcare has provided a growth opportunity in the legal specialty of malpractice. Malpractice also provides additional business for insurance companies, as now providers must protect themselves against the consumers they treat, while consumers use this avenue of problem resolution to protect themselves from incompetent providers. This avenue of recourse for consumers has in encouraged providers to give consumers the most healthcare possible, in an effort to avoid prosecution. This then increases costs

to the payors (insurance companies), who, in order to maintain profit margins, increase prices to employers. The government does not respond to the same price increases, though it must be aware when its funding level puts the service delivery system out of business. Institutions that are primarily funded by the government have a very difficult time making a profit.

John McKnight, in his book *The Careless Society: Community and Its Counterfeits,*[24] goes beyond the typical analysis of healthcare system failure to identify the roles that all the parties play in maintaining a system that is dis-eased itself. McKnight asserts that the problem is not that we have ineffective service producing systems, but that our systems are too powerful, and our communities too weak. He believes that:

> The most significant development transforming America since World War II has been the growth of a powerful service economy and its pervasive service institutions. Those institutions have commodified the care of the community and called the substitution a service.[25]

McKnight believes that physicians, and the institutions that have grown up around healthcare systems, are exemplary models for professionals seeking imperial prerogatives. At the core of our healthcare system is a paradigm for modernized domination, which functions through the propagation of a therapeutic ideology. The basic creed of the ideology is: "1) the basic problem is you, 2) the resolution of your problem is in my professional control, and 3) my control is your help".[26] The essence of this is to mask the control that the healthcare system wields behind the smokescreen of therapeutic help.

Obviously, our healthcare crisis begs for reform of the system. Unfortunately, healthcare reforms perpetuate the dis-eased system, as the healthcare systems themselves define both the problem and the solution. Rather than significantly changing the system to benefit those it attempts to serve, each reform is a new growth opportunity for the system to exert control and expand its influence. McKnight views the current reforms in Table 1 as advancing medicine's hegemony:

Table 1. Healthcare Reforms and Their Result.

Reform	Result
1. *Effort to ensure equal access to medical care* (supporting doctors in underserved areas, programs to increase the number of healthcare workers, regulatory systems allocate beds based on medical need).	1. Achieving equal access broadens clientele base and establishes the *right* to consume services as a central issue, while litigation establishes the 'right to treatment'.
2. *Focus on improving the quality of healthcare* (increased professionalization and review processes are supported by federal, state and medical practitioners).	2. The guarantee of quality services reinforces the popular belief that that health care professionals know what health is, while the critical issue is making the professionals *produce* "it".
3. *Attempts to deal with costs* (comprehensive prepaid systems, HMO's, Medicare/Medicaid and the national health insurance discussion represents efforts to	3. Cost control ensures a rationalized guarantee of the medical systems income, with the central issue being how to extend the system while lowering or stabilizing the

Reform	Result
conquer the medical systems' growing capacity to consume the gross national product).	price.
4. *The effort to involve "health consumers" in the system* (government and medical industry gradually enabling non-professionals to participate in the decision making processes of the system).	4. Consumer participation co-opts potentially disruptive citizens by providing participation in medicine as a substitute for political action that might affect the system.
5. *The increase concern over ethical issues posed by modern medicine* (organ transplants, abortion, life extension technologies provide new crises and new public and professional policies).	5. Ethical reform could limit medical hegemony by concluding that such issues are not medical prerogatives, however, theologians and clergy have been co-opted by expanding their trade and becoming counselors for decisions
6. *The preventative healthcare movement* (provides policy alternative to "get at the root of the problem", calling for continuing check ups, screenings, and outreach plans designed to encourage and enable more people to use the system).	6. "Preventative" medical care can make every person a client everyday of his life—medicalized prevention tells us that we need the medical system precisely because we do not perceive a need.

Note: From McKnight, L. (1995). *The Careless Society: Community and its Counterfeits.* New York: Basic Books p.56-60.

Health care reform to date has not only promoted the growth of the system, but has had political implications as well. In our economy, the expansion of healthcare systems creates new markets, new income opportunities, and forestalls unemployment, all disguised as help.[27] Expanding medical systems also require the manufacture of need, and as each need is created, citizens have an increased sense of deficiency and dependence.[28] To meet the ever-growing demand, we have to have more trained professionals. McKnight believes that an essential function of professional training is to increase the capacity of the trainee to define others as deficient while decreasing their capacity to cope. Also, as physiological health diminishes while medical resources increase, political energies are increasingly consumed with healthcare system reform, which reinforces the need for and the dependence on the healthcare system. Medical care then becomes a placebo for political action. Almost half the patients seen in the U.S. are classified by physicians as being seen for non-physiological problems.[29] When asked why, physicians identify a host of cultural, social and economic problems that might be addressed by political action if patients were not being taken care of in the healthcare system.[30] As public belief in the need for medically defined services expands, people act less like citizens and act more like clients—people who believe that they are going to be better because someone knows better.

Looking at one of our latest epidemics in healthcare, the epidemic of obesity, 88% of those surveyed thought the government was doing too little or the right amount.[31] Only 8% thought the government was doing too much, and 4% were unsure. Curiously, the Time magazine poll indicated respondents thought that the top two causes of obesity were not getting enough physical exercise (86%) and poor eating habits (84%).[32] Lack of

information as a cause for the epidemic was at the bottom of the list. This suggests that McKnight is on the right track with his ideas about how the current system of care keeps the public dependent and despondent: the top two causes are well within individual control, however, 88% of the respondents wanted the authorities to continue or increase addressing the problem.

Healthcare, through its processes and institutions, has had the unintended side effect of making health and healing mysterious, to the point of commodifying the service so that people consume it, even if they don't understand it. The system clearly appears to be set up to serve those who run it. We have all been co-opted as consumers and/or players in the system services. As McKnight points out:

> Many people encounter a life interruption, call it a disease, and take it to a doctor or a hospital where it is treated un-understandably by people who speak in mystifying tongues. The result is for the "person" to become a "patient" in the face of the malady. The malady becomes a commodity of the medical profession, and health becomes a consumable as citizens become "health consumers". There is, of course, no possibility that health can be consumed. [The] health consumer….is a medically engineered mythical being has entered the fantasy life of modern society and emerged as a client…[which] is the necessary commodity to meet the needs of the medical system. Thus health becomes a new medium for converting citizens into clients who consume the systems commodities in order to achieve well being.[33]

The fact that 15% of the population has no health insurance and thus limited access to the system might just save their lives. McKnight quotes the motto placed on bottles of famous medicine maker, Eli Lilly, in his early days: “a drug without side effects is no drug at all”.[34] In fact, McKnight asserts that the negative side effects of the healthcare system are now manifest at multiple levels of our everyday lives, so much that we hardly notice the program to perpetuate dis-ease running in the background. In the future we will see increasing public awareness of the abdication of our power as individuals within the healthcare system, the ways in which we unwittingly participate in advancing the growth of the system, and the steps we can take to reclaim what is actually our health.

Healthcare Alternatives

Clearly, our healthcare system is in need of major reform. One way to decrease the cost of healthcare is to assist people to be healthier so that they will need and/or use less of the healthcare system. This is beginning to happen for those who have resources to go outside the healthcare system to improve their health. For those with limited resources aside from their health plan, there may be little incentive to use those limited resources to improve their health. As the baby boomers age, they are creating a demand for more health and wellness information and products, and are seeking alternatives to the traditional medical system unlike any generation before. Generation X and subsequent generations are expected to follow in the boomer established proactive approach to health as standard practice.[35] As individuals look outside the traditional healthcare system for ways to improve their health, they are discovering a variety of options. One area that has

received much public attention in the last decade is that of intention, spirituality, and healing.

A growing body of research demonstrates the efficacy of alternative and preventative care methodologies, including spirituality, prayer, intention and distant healing. Yet HMO's and insurance companies have largely ignored that research, and their administrators have failed to make the connection between their own personal beliefs and practices and the way they conduct their businesses. At the 1997 Annual meeting of the American Association of Health Plan Executives, 300 HMO executives were surveyed about their feelings on the role of religion, spirituality and prayer in healthcare. More than 90% said they believed that prayer and other religious practices could facilitate rapid healing. Approximately 75% felt that spirituality could reduce health care costs. However, these executives apparently have not translated their beliefs into actions that could benefit their companies and the people they serve. An estimated 90% of the health plans disregard the link between spirituality and well being, and 75% of the plan administrators reported that they would need direct evidence of the healing power of faith before funding more spiritual practices.[36]

At the Veterans Affairs Hospital in Brockton, Massachusetts, a 30-month study showed that daily chaplain visits cut hospital stays by 3 days, saving an estimated $4000 per patient. Pastoral visits at this hospital cost about $100 per patient.[37] In 1990, Dr. Herbert Benson set up the Mind/Body Institute based at Deaconess Hospital in Nashville. They teach relaxation techniques and other inner self-management techniques to over 7500 patients a year, and have seen overall HMO visits decrease by 50% and visits for

chronic pain decrease by 30%.[38] Clearly, evidence of the impact of methods outside the traditional allopathic system exists.

Health and healing is multifaceted, with meaning ascribed according to the individual and the context. Health and healing are frequently referred to as both states and processes. There are a variety of definitions of health and healing, with little consensus among professionals. In the 1970's, nurses were taught that health was the absence of disease; symptom reduction was the focus so that people would be more "healthy". Healing was not something that was discussed, except in the context of either wound healing or of faith healing, and the latter was misunderstood and viewed as strange. Yet health and healing are best seen as subjective states as well as subjective processes, susceptible to frequent and unpredictable change.

The World Health Organization's definition (which has not been amended since 1948) is that, "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". This was probably a definition ahead of its time in 1948, although today many believe any definition of health must include a spiritual dimension as well. Levin makes the case for connecting spirituality and health, proposing a model which would include spirituality in our definition of health and healing. Levin reviewed research and found evidence of a protective factor in health and a therapeutic factor in healing connected to religiosity, faith, or spirituality. His model identifies "human health and the healing process as functions of physical, emotional, mental and spiritual determinants", calling for studies from a multidimensional and multifactoral perspective.[39]

Health means different things to people at different times in their lives. As a state of being, it is a matter of perspective, and the context in which it is considered is key to the meaning. To consider common definitions, one can look to Webster's, which defines health as:

> **1** physical and mental well-being; freedom from disease, pain, or defect; normalcy of physical and mental functions; soundness **2** condition of body or mind [good or bad health] **3** a wish for a person's health and happiness, as in drinking a toast **4** soundness or vitality as of a society or culture.[40]

Webster's definition of health as both a state and a process is common. Another perspective is that of Leddy, who believes health can be dichotomized into disease and wellness or as a continuum from high-level wellness to death. Within the disease perspective, Leddy defines health as "a state or condition of integrity of functioning (functional capability and ability) and perceived well being".[41] Although Leddy views health as "a state of being",[42] for most of us, in our everyday lives, health is a *process*. Indeed, Jonas and Crawford think of health as a process, and in qualitative research terms, encourage us to consider the gerund form of the term 'health' as 'healthing'.[43]

While in general health can be seen as a movement toward wholeness, an ideal definition would be one that is consistent with energy medicine studies as well as perspectives on the holographic universe and quantum physics. For example, Wendler, a nursing theorist, defines health as a "pattern of intra- and inter-relationships with their environmental fields in an exchange of energy, in an upward spiral toward absolute consciousness".[44] Newman, another nursing theorist, also sees health as:

> movement toward consciousness, a pattern of expanding consciousness…toward increasing complexity….[consisting] of infinitely fine vibrations of high frequency, low amplitude waves [which], as they approach infinity, approach a straight line of absolute consciousness".[45]

Both of these are consistent with a view of health as both a product and process of interaction with the universal field of consciousness, or what Bohm refers to as deeper levels of reality, the implicate order.[46]

Health research has been conducted in general for many years, but tends to focus on the process of disease and symptom reduction. Typically health research is limited to select interventions and a few measures per study directed at a specific health problem or concern. Research may involve evaluating interventions to improve a health condition, decrease symptomotology, or prevent symptoms/disease. Research evaluating outcomes of healing in order to improve health should be considered a subset of the category of health research.

Unlike health, healing is usually defined more as a process or intervention than a state, but again the definition depends on perspective and context. Dossey makes a case for standardizing our language, not only to make it clear what we are talking about, but also to be able to research it and explain it to others.[47] The most widely accepted definition, albeit unscientific, comes from Webster's, which defines healing as:

> **1** to make sound, well, or healthy again; restore to health [*heal* the sick] **2** a) to cure or get rid of (a disease) b) to cause (a wound, sore, etc.) to become closed or scarred so as to restore a healthy condition **3** free from grief, troubles, or evil, etc. **4** a) to remedy or get rid of (grief, troubles,

> etc.) b) to make up (a breech, difference, etc.); reconcile—***vi.*** **1** to become well or healthy again; be cured **2** to become closed or scarred, said of a wound—***SYN.*** CURE.[48]

Unfortunately, Webster's still defines healing as synonymous with cure. As the public becomes more educated about health and healing, this common perception continues to change. Lewis and Ballantine both tell us that the simplest definition of healing is "to make whole".[49,50] Ballantine points out that the word 'heal' comes from the Anglo Saxon word *häl,* which also means health and whole. In a broad context, healing is best viewed as a movement towards wholeness.

Although not a state, healing can be defined as both a process and an intervention. Standardization of definitions and language is critical from a research perspective. Benor, who compiled and analyzed 191 studies of healing, defines healing as an intervention, and categorizes healing interventions into two types:

> **Healing—**Any systematic, purposeful intervention by a person purporting to help another living thing (person, animal, plant, or other living system or part thereof) to change via the sole process of focused intention or via hand contact or 'passes'. *Type 1 (distant, or absent healing)* is the projection of healing solely through the efforts of the mind of the healer to the healee. *Type 2 (touch; near-the-body; or laying on of hands healing)* is the projection of healing through the body of the healer to the healee. This may involve various movements of the hands, of the healer around the body.[51]

Benor's distinctions were useful in looking at the studies that he analyzed; however, his nomenclature of Type 1 or Type 2 has not found widespread use among other researchers. Dossey, as part of the Samueli Symposium on Definitions and Standards in Healing Research, defines healing as a process, along with 4 different types:

> **Healing:** Those physical, mental, social and spiritual processes of recovery, repair, renewal, and transformation that increase wholeness, and often (though not invariably), order and coherence. Healing is an emergent process of the whole system and may or may not involve curing. **Healing intentionality:** the effort by one or more persons to improve the health status of another person through conscious, purposeful, actions. **Nonlocal (or distant) healing:** a hypothesized form of healing intentionality occurring beyond the reach of the physical senses and that appears to be unmediated by any demonstrable form of physical signal. **Holistic healing:** a form of healing based on attention to all aspects of an individual-physical, mental, social, and spiritual. **Healing relationships:** The quality and characteristics of interactions between healer and healee that facilitate healing. Characteristics of this interaction involve empathy, caring, love, warmth, trust, confidence, credibility, honesty, expectation, courtesy, respect, and communication.[52]

Dossey's definitions will significantly advance future research in healing, and give us all a common language for understanding, communicating and replicating research on healing. Unfortunately, Dossey does not consider intention broadcast from a device in his

definitions, but, in time this may also be incorporated into the standard nomenclature for healing.

Another useful definition has been offered by Kleinman, who describes healing as pathways of words, feelings, values, expectations and beliefs that re-order and organize (make more coherent) the illness experience,[53] and one could also add, the experience of health. Wendler defines healing as "an experiential energy requiring process in which space is created through a caring relationship in a process of expanding consciousness and results in a sense of wholeness, integration, balance, and transformation and which can never be fully known"[54] Though Wendler's experiential energy requiring process or Leddy's state of integrity of functioning may never be able to be fully known, through standardization of language and research we can come to understand the state of health, and the processes of health and healing, in ways which will assist humankind to optimize further development.

This dissertation evaluates the potential for a new kind of health improvement intervention, utilizing the cutting edge model of William Tiller, PhD. Dr. Tiller is a material scientist and Stanford Professor Emeritus. His model suggests that through the use of quantum physics principles, we can impact many things, one of which is the health of a population. This research is one of the first studies on humans that utilizes Tillers' model of intention[55] to impact health, giving us more information about positive ways to impact health and healing, and suggesting directions for future research. Dossey made an excellent suggestion when he proposed that we adopt as a motto for the current state of health and healing research the comment of astronomer-physicist Sir Arthur Eddington: *something unknown is doing we don't know what*.[56] Through further research, utilizing

breakthrough innovation from a variety of other fields beyond what is traditionally considered health, we can identify the unknown and find out what its doing.

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CHAPTER 1:
LITERATURE REVIEW

Healing practices that use mental and spiritual techniques are part of every culture, although the mechanisms of action by which they improve or maintain health are largely unknown.[1] There are many factors involved in being healthy – diet, exercise, lifestyle, genetic make-up, environment, attitude, as well as the complex interactions of these and many other individual factors.[2] Stress is one factor that has had an increasing impact on health in the last 30 years and is often cited in the literature as a major cause of disease. [3] Stress is defined as "the non-specific response of the organism to any pressure or demand,"[4] and, although humans have the capacity to adapt to multiple stressors, every time we do we lower our tolerance and our ability to successfully adapt to the next stressor.[5] Eventually this maladaptation leads to the development of major stress symptoms, and which often lead to illness.[6] One local physician is fond of saying "Adrenaline is not your friend unless you are being chased by a sabre tooth tiger!"[7] Understanding the mechanisms of action of illness and healing will facilitate the development of interventions that are designed to improved health.

This literature review looks at two common stress related illnesses, depression and anxiety, and the current research related to intention and healing of illness. Models for the mechanism of action of intention are explored, including selected theories of consciousness as they relate to possible mechanisms of action in energy medicine. Finally, research utilizing an intention imprinted device on animate and inanimate objects is examined.

Depression and Anxiety

Physiology and emotions have been found to be closely linked. When stress or other factors impact us, we experience a physiologic imbalance, which may manifest as a mood disorder, resulting in our system becoming blocked, shut down, or disarrayed.[8] Depression and anxiety are two of the most common stress-related mental illnesses. Dr. C. Norman Shealy believes that depression and anxiety are precursors in 85% or more of people who are ill (Personal communication, October 9, 2004). Skaer, Robison, Sclar, and Galin compared primary care office visits in 1991-92 and 1995-96, finding an increase in the diagnosis of anxiety, and an increase in the co-morbid diagnosis of depression. They concluded that the high prevalence of anxiety disorders, predominantly in women, represents a major public health concern.[9]

Anxiety disorders are prevalent not only in the US, but worldwide.[10] In the United States, one-year prevalence for all anxiety disorders among adults ages 18 to 54 exceeds 16 percent and there is significant overlap or co-morbidity with mood and substance use disorders.[11] Anxiety disorders impact the economy as well. According to "The Economic Burden of Anxiety Disorders," a study commissioned by the Anxiety Disorder Association of America based on data published in the Journal of Clinical Psychiatry, anxiety disorders cost the U.S. more than $42 billion a year, almost one third of the $148 billion total mental health bill for the U.S.[12] More than $22.84 billion of those costs are associated with the repeated use of healthcare services, as those with anxiety disorders seek relief for symptoms that begin by mimicking physical illnesses.[13] People with an anxiety disorder are 3-5 times more likely to go to the doctor and 6 times more likely to be hospitalized for psychiatric disorders than non-sufferers. [14]

Major Depressive Disorder is the leading cause of disability in the U.S., with the average age of onset during the mid-20s. [15] The 2003 National Co-Morbidity Survey Replication Study found more than 30 million adults in the United States have major depressive disorder.[16] At least 8% of adults in the United States experience serious depression at some point during their lives, and estimates range as high as 17%.[17] The illness affects all people, regardless of gender, race, ethnicity, or socioeconomic standing, although women are 2-3 times more likely than men to suffer from depression.[18] Experts disagree on the reason for this difference, citing possible explanations as the differences in hormones and in society's expectations of women.[19]

Depression occurs in all parts of the world, although the pattern of symptoms can vary. The prevalence of depression in other countries varies widely, from 1.5 % of people in Taiwan to 19 % of people in Lebanon. A number of large-scale studies indicate that depression rates have increased worldwide over the past several decades.[20] Depression is the second most chronic disorder seen by primary care physicians,[21] with 12 percent of the patients seen in primary care settings diagnosed with Major Depressive Disorder (MDD).[22] The co-morbidity of MDD with anxiety disorders, substance use disorders, and impulse-control disorders is significant, with nearly three quarters (72.%) of patients with lifetime MDD meeting the criteria for at least one other mental disorder.[23] Depression has been correlated to increase risk for physical illness:

> The National Mental Health Association believes that in 1999, 19 million Americans over the age of 18 (9.5%) suffer from a depressive disorder. Of these 19 million Americans, approximately 12 million of them are women (12%), indicating that the rate of depression in women is almost

twice what it is in men. These numbers are very high, particularly when considering the health impact of depression. For example, people with depression are four times more likely than those who have never had depression to have a heart attack. [24]

The most common and most convenient treatment for depression is medication. Shealy cites clinical medicine reports, which indicate that 20% of Americans are taking antidepressant drugs at any given time, and that at least another 20% 'need' antidepressants.[25]

Anxiety and depression are definitely factors that impact health. Mood altering drugs represent at least 25% of the total pharmaceutical costs in the U. S.[26] There are a multitude of complications from taking these medications, ranging from damage to the liver, kidneys, heart, and a reduction of blood manufacturing capacity, as well as the conversion of anxiety to depression, and even death.[27] With a 25% complication rate and 42% effectiveness rate, it becomes clear that noninvasive, alternative therapies are needed for anxiety and depression.[28] Clearly alternatives, such as intention, merit consideration to deal with depression and anxiety.

Consciousness, Health and Intention

Energy as a phenomenon has been proven by various branches of science to have a significant impact not only on the human body but the world in which we live.[29] As our understanding of the ways in which energy works increases, we can improve not only our health, but our world as well. Several leading authorities in energy medicine have offered perspectives on the ways in which energy impacts health. For example, C. Norman Shealy, M.D., PhD. in his book “Sacred Healing” states, “When human

consciousness does not reflect and transmit the qualities and powers of the soul, significant psychological and physical illness can result".[30] Similarly, Rudolf Ballantine, M.D., in his book, "Radical Healing" weaves together a variety of traditions to create a new vision for health that declares, "Consciousness is the most powerful causative level of our being". [31] Looking at health and illness from different levels of energy dysfunction of the multidimensional human, Richard Gerber, M.D. in his book, "Vibrational Medicine for the 21st Century" concludes that health and illness are "about our total energy environment, which includes the emotional energy environment we create through our consciousness and our attitudes towards people and events in our lives".[32]

One model for understanding how consciousness, intention and the universe are structured comes from physicist David Bohm. Bohm views consciousness as an interconnected whole which he calls the implicate order. His theory, based in quantum physics, is that our universe is comprised of an implicate and explicate order, folding and unfolding continuously.[33] Bohm views this as a more viable explanation of how our thoughts are related to reality than the widely accepted relativity theory which considers reality as a series of separate, distinct, and not necessarily related particles.[34] Bohm's unified field of consciousness theory provides a basic model for understanding how we interrelate and impact our world.

Sheldrake's morphic resonance further defines and explains Bohm's unified field. Morphic resonance is the "effect of form upon form across space and time".[35] Sheldrake postulates that these "effects" organize all systems based on the patterns and organizations of previous systems. This takes place in the morphogenic field.[36] Sheldrake theorizes that the cumulative effects of previous morphogenic fields act to provide the

structure for the present morphogenic fields, across all space and time. He calls this "formative causation", suggesting that morphogenic fields have a causal impact on the form of all living systems. He suggests ways to study formative causation, relates it to consciousness, materialism, creativity and transcendent reality, proposing that a "transcendent conscious being" may be the source of everything in the universe, which, according to formative causation, is a reflection of that transcendent unity from which everything is derived.[37]

Oschmans "living matrix continuum" appears to be similar to Sheldrake's morphogenic fields. Oschman identifies what he calls the basic mechanism of life, or the non-neural communication system that accounts for previously unexplainable mysteries that we typically only fleetingly glimpse in crisis, transcendent moments, or exceptional performances.[38] He calls this system the living matrix continuum. He proposes that instead of causes for diseases, we may actually have a "loss of systemic cooperation" among the living matrix continuum. Extensive research from a variety of disciplines validates his ideas about the living matrix, leading him to conclude that multiple forms of consciousness exist, from the molecular level to the infinite.[39] On a practical level, he encourages us to trust our intuitions, as they may be based on more information (from the living matrix continuum) than our limited perceived reality.

McTaggert calls her conception of this cosmic soup simply "the field".[40] McTaggert is one of several leading authors and scientists who have addressed the question of how the universe, consciousness and intention function together. An investigative journalist that integrated 50 years of consciousness research into a concise perspective for the lay public, McTaggert believes that at our most basic level, we are an

energetic charge, connected in a sea of energy to every other energetic charge through all space and time.[41] This energy field is the substructure of our universe, the blueprint for humanity and our world. It is a communication and recording medium for everything, which allows everything to communicate with and be influenced by everything else.[42] Another author, psychologist Valerie Hunt calls emotions the "mind-field organizer", demonstrating that our thoughts are part of the larger universe of thoughts.[43] She relates illness to chaos in the energy field, or "non-coherence" of the person's consciousness. Through learning to coherently organize our emotions, we evolve spiritually and move toward health.[44]

One of the most fascinating models for changing health through consciousness is Katra's, in which she speculates that we could change our health status by changing the host so that the disease no longer recognized the host, understanding that this would necessitate changes in physical, emotional, social, and spiritual life.[45] Dean Radin, former Director of the Consciousness Research Laboratory at the University of Nevada and now Senior Scientist at the Institute of Noetic Sciences (IONS), speculates that the use of consciousness, through distant mental healing, is clinically useful and will give rise to new medical specialties which he terms "techno-shamanism, an exotic, yet rigorously schooled combination of ancient… principles and future technologies"[46]

The theories of the previous authors are stated another way by physicist Brian Greene in his string theory. For Greene, everything in the universe may well be composed of ultramicroscopic loops of energy that he calls "strings".[47] He explains how string theory works:

> ...the microscopic fabric of our universe is a richly intertwined multidimensional labyrinth within which the strings of the universe endlessly twist and vibrate, rhythmically beating out the laws of the cosmos. Far from being accidental details, the properties of nature's building blocks are deeply entwined with the fabric of space and time.[48]

According to string theory, everything at its most basic level is made up of vibrating strands of energy, each of which has its own preferred pattern of vibration.[49] Electrons are really strings vibrating one way, while quarks are strings vibrating in another way. String theory explains the fundamental properties of particles and the forces by which they interact and are influenced by each other.[50] Greene wonders:

> Is it really the case that feelings of joy, sorrow, or boredom are nothing but chemical reactions in the brain-reactions between molecules and atoms that, even more microscopically are reactions...between ...particles...which are really just vibrating strings?[51]

Greene's notion of our universe at its most basic level being comprised of vibrating patterns of energy is controversial, yet offers an explanation that rings true for the interaction of the universe, consciousness and intention. If our universe is really made up of patterns of vibrating energy, then research on health, intention and healing will support the notion that we can be influenced by vibration.

Research on Intention and Healing

Much has been written about what Larry Dossey, M.D. calls "Era III Medicine", in which human consciousness functions outside of the physical confines of the brain and body.[52] In his book "Reinventing Medicine", Dossey makes the case for "non-local"

healing or directed conscious intent that impacts the well being of another human.[53] Although intention has been written about frequently from various professional and lay public aspects, only in the last twenty years has it been included as a variable in traditional medical research. Much of the research that has been conducted has lacked scientific agreement on standard definitions and protocols that fit the widely accepted traditional medical model of research. Considering the difficulties with this type of research in the traditional medical research framework, a standard definition of intention will be proposed, and research utilizing intention will be reviewed.

In 2003 the First Samueli Symposium brought experts in the healing research arena together to focus on the definitions and standards of healing research, with a goal of addressing two major current issues in the field: 1) lack of standardized definitions and 2) poor quality research due to flaws in design, measurement, and analysis.[54] The experts put forth clear guidelines based on traditional medical research using standardized reporting requirements for randomized trials (CONSORT), meta-analysis and systematic reviews of these trials (QUOROM), and meta-analysis and systematic review of observational trials (MOOSE), as well as adapting these models for other types of research, including laboratory, qualitative, outcome, epidemiological, and technological research.[55] Use of these standards will facilitate communication to and exchange of information with the larger scientific community and the lay public. Many of the studies cited below have been criticized for design flaws that might have been prevented through the use of these guidelines. Nonetheless, the research on healing and intention to date provides us with information for the direction of future studies.

In the literature, intention has been referred to by a variety of terms. This phenomenon is written about as "prayer", "distant intentionality", "empathetic concern", "intercessory prayer", "intention", "faith", "distant healing", "faith healing", "energy healing", "spiritual healing", and "distant prayer".[56, 57 58, 59, 60, 61] These terms are used to discuss the phenomenon described by William A. Tiller, Walter E. Dibble, Jr., and Michael J. Kohane in "Conscious Acts of Creation: The Emergence of a New Physics", in which there is action to direct an outcome.[62] A broad definition of intention is thought that includes action. For the purposes of this study, the term "intention" was used generally to refer to the collective phenomena.

In religion throughout the ages, prayer has been accepted as a method by which to try to influence an outcome or a particular situation.[63] A variety of studies, some double blind, have been done to test the impact of prayer or intention on medical conditions, with findings ranging from no effect to decreased mortality, decreased complications, and decreased length of stay in a coronary care unit. [64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76] The results have been inconsistent and in some circles quite controversial, with critics citing problems from flawed study design and poor control of variables, to accusing researchers of metaphysical fraud and religious heresy.[77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91] Part of the controversy rests with the fact that until recently, there had not been an adequate, scientific model explaining the mechanism of action. Dr. Tiller has developed such a model, which proposes the mechanism by which intention and consciousness significantly affect physical reality.[92]

There have been a multitude of studies on the impact of intention on animate and inanimate objects; however, as noted, a common definition of intention among

researchers has been lacking. Benor, [93] Jahn and Dunne, [94] Pearsall,[95] Pert, [96] Targ,[97] Targ and Katra,[98] and Tiller [99,100] do not explicitly define intention in their studies. The United States Department of Defense, which commissioned some of the early work on remote viewing by Jahn and Dunne, defined intention as "an aim or design (as distinct from capability) to execute a specified course of action".[101] Oschman, in his study of energy medicine, defined intention as "deciding in advance the goals they wish to attain".[102] Webster's fourth edition describes intention in a manner that is consistent with the definitions utilized or implied by most energy medicine research studies:

> 1 the act or fact of intending; determination to do a specified thing or act in a specified manner 2 a) anything intended or planned; aim, end or purpose b) [pl.] purpose in regard to marriage 3 [Rare] meaning or import 4 Philos. The direction or the orientation of the mind toward an object. [103]

From the perspective of Bohm,[104] Dossey,[105] Hunt,[106] McTaggert,[107] and Radin,[108] intent is part of the larger field of consciousness. Pop psychologist Wayne Dyer, who recently had a special production televised on the Public Broadcasting System (PBS) regarding intention, cites Carlos Castaneda's definition: "Intent is a force in the universe".[109] Dyer believes that intention is not something you do, but is a "force that exists in the universe as an invisible field of energy". [110]

Braden tells us that quantum science has demonstrated that all outcomes are already created; they are just waiting to be called into this reality by us, which can happen by commission, omission, or ignorance.[111] According to Braden, quantum energy, or bursts of energy created by our thoughts, feelings, and emotions generate "choice points", where we have the opportunity to jump from one possibility to the next.[112] He

calls this ability to change the future based on the choices we make in the present the Isaiah Effect. Recently, there was a cinematic portrayal of this concept in the movie "The Butterfly Effect". [113] In this story, a teenager discovers how to travel back in time to key moments where he made certain choices or decisions in his life. By making different decisions, the teenager creates different future realities for himself and his friends, often with disastrous effects. In the end, he makes a choice that creates a positive outcome for the main characters. This illustrates Braden's concept of choice points, where decisions or choices made take one on a certain path toward a certain reality. A different choice, as portrayed in the movie, creates a totally different reality.

From the popular to the scientific, intention has a variety of both implicit and explicit meanings, and must be taken in the context from which it is offered. For the purposes of this question in the context of research, Radin's definition of intention as "the mind's will" is broad enough to include the variety of research evaluating individual effort yet narrow enough to exclude evaluation of the field of consciousness of the universe.[114] Early in this study, in discussion to attempt to discern the difference between prayer, with all its religious connotations, and intention, which is neutral, David Eichler, PhD., informed me that he believed that "every thought is a prayer".[115] If every thought is a prayer, or a request to the universal field of consciousness, made by what Radin would call the mind's will, then thought has the ability to impact our reality and move us towards certain choice points, creating our reality. This minds will that Radin speaks of is congruent with the definition of thought including an action.

A variety of experiments have been conducted on the impact of intention on animate and inanimate objects. Benor reviewed the research on spiritual healing in 2001, in which he defined spiritual healing as a:

> Systematic, purposeful intervention by one or more people to help another living being (person, plant, animal, or other living system) by means of focused intention, hand contact or passes to improve their condition. [116]

According to Benor, intention is part of spiritual healing. Through his annotated review of 191 randomized controlled studies, he found that 83 (43.4%) demonstrated effects at statistically significant levels which could occur by chance only one time in a hundred or less, and another 41 (21.5%) at levels that could occur between two and five times out of a hundred.[117] Though not all the studies specifically addressed intention as an independent variable, it is part of the operational definition that Benor is using to evaluate studies to answer the question "Does healing work?". This is the published review volume of healing studies in which intention research was included.

Jonas and Crawford reviewed over 2,200 published reports on spiritual healing, energy medicine, and mental intention, defining intentionality as "intentional mental effort".[118] This suggests thought that includes action, or the mind's will.[119] Jonas and Crawford reviewed research in the areas of (a) health correlates of spiritual and religious practices; (b) intercessory or healing prayer; (c) 'energy' healing approaches; (d) therapeutic qigong (Chinese energy healing); (e) direct mental interaction with living systems; and (f) mind-matter interaction studies. Jonas and Crawford used established quality criteria to review and grade the studies according to the "evidence level" presented by a category of research. See Table 2 for a summary of their evaluation:

Table 2. Evaluation of Research on Intention, Healing, and Energy Medicine.

Category	Number of Studies	Positive Outcome	Evidence Level
Religious Practices	130	97	D
Prayer	13	6	B
Energy' Healing	19	11	B
Qigong (Clinical Research)	58	Almost all	C
Qigong (Laboratory Research)	33	Almost all	F
Laboratory Research On Bioenergy	45	43	B
Direct Mental Interaction With Living Systems (DMILS): Electrodermal Activity	24	9	B
Research On Mind-Matter Interactions (MMI): Individuals	516	516	A
Direct Mental Interaction With Living Systems (DMILS): Remote Staring	13	7	B
Research On Mind-Matter Interactions (MMI): Groups	80	80	E

Note. Studies were evaluated with a grade of "A" being the highest, indicating at least 3 independent, high quality studies and "F" being the lowest, indicating expert opinion without high quality research. From Jonas, W.B., and Crawford, C. C. (2003). *Healing, Intention and Energy Medicine*. London: Churchill Livingstone, p. xv-xvii.

Jonas and Crawford's review indicates intention as a variable in research has been studied with mixed results, those results being the strongest in studies with inanimate objects. Jonas and Crawford conclude that:

> Mental intention has effects on non-living random systems (such as random number generators) and may have effects on living systems.

While conclusive evidence that these mental interactions result in healing specific illnesses is lacking, further quality research should be pursued. [120]

The last type of research not previously mentioned that uses intention as an independent variable has been conducted by Dr. William Tiller, utilizing a device called an Intention Imprinted Electronic Device (IIED) to broadcast intention continually. In these studies, four experienced meditators imprint a device with an intention for change in a target subject.[121] Three specific target experiments, involving changing the pH of water, decreasing the maturation time of fruit flies, and increasing liver enzyme activity yielded robust results.[122] The replication of these experiments over time also demonstrated an unexpected effect: structural changes in the physical space where the experiment was located seemed to facilitate the robust effects that Tiller's imprinted device had on the targets.[123] Tiller calls this phenomenon the "conditioning" of the space.[124] While a number of researchers are validating that intention as an independent variable does have an impact, Tiller's work not only demonstrated a significant impact but also proposes a model for the mechanism by which intention actually alters the target.

The Tiller Model of Intention

The model developed by Tiller is primarily an energy model, as opposed to a consciousness model, and is based on quantum physics principles.[125] The model describes a multidimensional theory that includes mechanisms for the impact of intention and consciousness on physical reality. Tiller's working hypothesis revolves around his belief that humans are primarily spirits having a physical experience through the perception of the ten dimensional domain of mind.[126] Tiller calls this perceptual

mechanism of mind the “simulator”, through which we experience life. He likens the simulator mechanism to a giant screen:

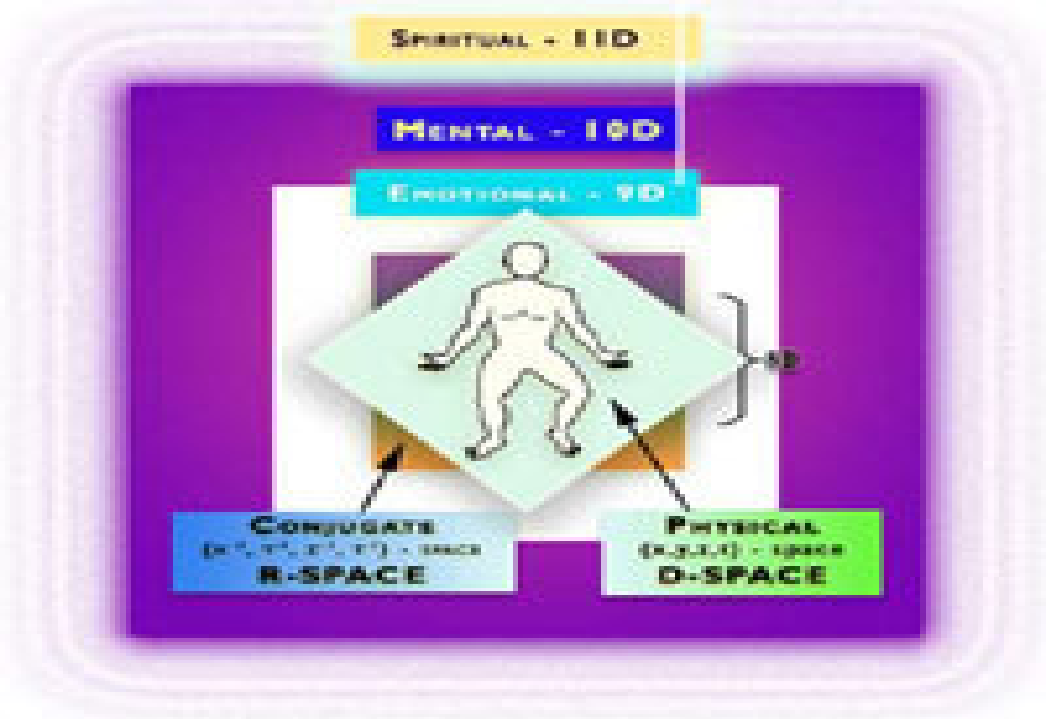
> … analogous to a huge 10-D interactive television set wherein signals enter the set from the next higher dimension to set the grand panorama in motion and we, the dancing figures on the screen, interact with the flow of the drama and thus modify the input signals to the set via our thoughts, attitudes and actions and these, in turn, alter the details of the play. Our concerns about physics deal with the various laws governing the interactions of the objects in the set with each other and with the basic machinery of the set. Our concerns about personal health and about medicine relate to the maintenance of the simulator at various levels of substance. Our concerns about human spirituality relate to the "why" of the simulator. The simulator is a teaching machine of absolutely wonderful capabilities - created by God's love for us so that we might experience and grow and be![127]

The Simulator

The simulator is composed of various physical and etheric (physical conjugate) frames of reference, all imbedded in each other and communicating energetically with each other to varying degrees.[128] This communication is enhanced by the presence of deltrons, a “coupling substance” which facilitates the transfer of information from the etheric (conjugate) levels to the physical level (See Figure 1).The practice of inner self-management techniques, such as meditation, yoga, and biofeedback, activates and

increases deltrons' activity, facilitating greater communication between physical reality and the etheric layers.[129]

Figure 1. The Simulator Model.



Note: This is dual four space frames (physical and conjugate physical (etheric) imbedded in the emotion frame (nine-space) imbedded in the mind frame (ten space) and this is embedded in the spirit frame (eleven space). From Tiller, W. A., William A. Tiller Foundation for a New Science: The Tiller Model. Retrieved May 15, 2004, from The Tiller Foundation: http://www.tillerfoundation.com/science.html

The physical and the etheric 4-space frames have a special "mirror"-type relationship to each other. Dr. Tiller calls the physical "direct" space, or D-space, and the etheric "reciprocal" space, or R-space. In D-space, the physical, electric matter of positive mass travels at velocities slower than the speed of light. In R-space, the etheric, matter of negative mass travels at velocities faster than the speed of light. The interaction between

the D-space matter and the R-space matter is what we presently call quantum mechanics.[130]

The Biobody Suit

Individually, we are all functioning in what Tiller calls a "biobodysuit", comprised of four layers, each of which have unique infrastructures and are made up of different substances.[131] The outer 2 layers constitute temporal physical reality, while the middle layers are non-temporal and could be called the spirit or soul. The infrastructure of the layers and the amount of deltrons to facilitate the communication or coupling between layers largely determine the state of the wellness of the whole person (see Figure 2).

Figure 2. The Biobody Suit.

Note: Layer one is made up of electric monopole substances, while layer two is made up of magnetic monopole substances. The third layer is made up of emotion domain substances, while the fourth layer is made up of mind domain substances. The coupling layer between layer 2 and 3 is postulated to consist of a substance which Tiller calls deltrons. From Tiller, W. A. William A. Tiller Foundation for a New Science: The Tiller Model Retrieved May 15, 2004, from The Tiller Foundation: http://www.tillerfoundation.com/science.html

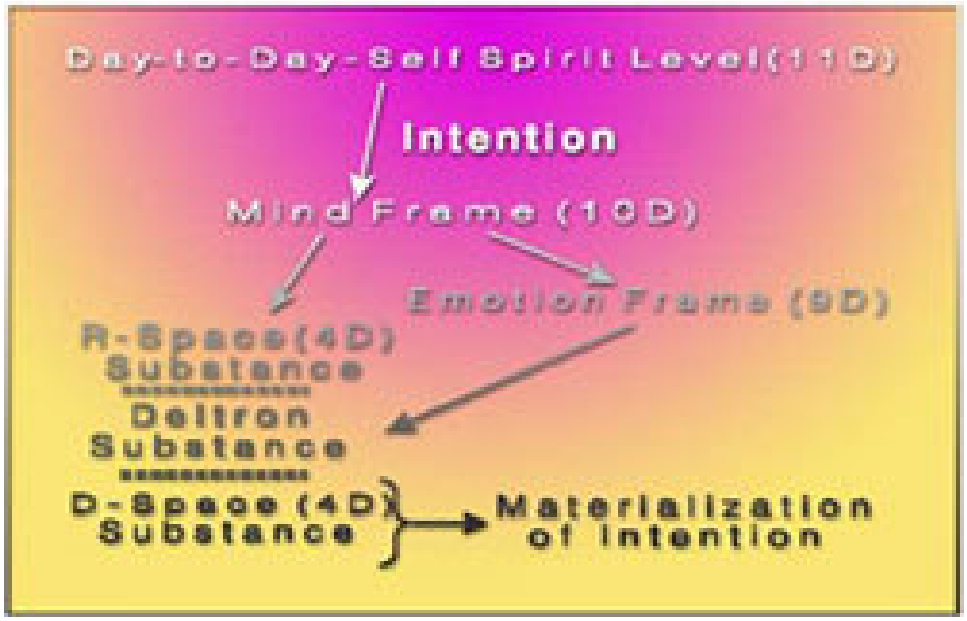
Inside this fourth layer of the biobodysuit is a portion of our spirit self that Tiller believes "drives the vehicle".[132] Tiller uses the metaphor of a diving bell to describe the multilayered suit, like an apparatus that our spirit self uses to sense and experience our environment. All of these inner layer substances function in what we presently call the vacuum, or the space between particles described in physics. The more structurally organized these layers are, the more of our high spirit self that can inhabit and communicate through the biobodysuit. Tiller theorizes that the four fundamental forces of present-day science (gravity, electromagnetism, short range and long range nuclear forces) all function in the layer one and somewhat in layer two of the biobodysuit, and what we currently refer to as subtle energies all function somewhat in layer two and in the inner three layers of the vacuum.[133]

Proposed Mechanism of Action

Based on his theory of the simulator and the biobodysuit, Tiller proposes a mechanism for the action of intention in physical reality. He proposes that an intention, from the level of spirit, is communicated as a detailed energetic information pattern which imprints on the domain of mind. The domain of mind then imprints this detailed energetic information pattern (intention) onto the R-space domain. This energetic information pattern (intention) is transmitted via the deltron substance onto the D-space domain. These energetic information patterns from R-space/D-space then connect with the mechanisms of the physical body to materialize the intention in physical reality (see Figure 3). Each time the energetic information pattern (intention) is imprinted form domain to domain, it is decreased slightly in resolution from the original intention. The

level of deltron activation also impacts the degree to which the original intention is communicated to D-space.[134]

Figure 3. Proposed Mechanism of Action for Intention



Note: Intention moves from the level of spirit and is communicated via the deltron substance to D-space, impacting reality. From Tiller, W. A. William A. Tiller Foundation for a New Science: The Tiller Model. Retrieved May 15, 2004, from The Tiller Foundation: http://www.tillerfoundation.com/science.html

This mechanism of action functions both ways, in that an intention can be processed from the level of spirit down to physical reality, and also from the level of physical reality to the level of spirit.[135] Tiller believes that intentions from the level of physical reality moving up to the level of spirit can not move back through the domains to materialize in physical reality if the intention is not consistent with the overall intention of spirit.[136]

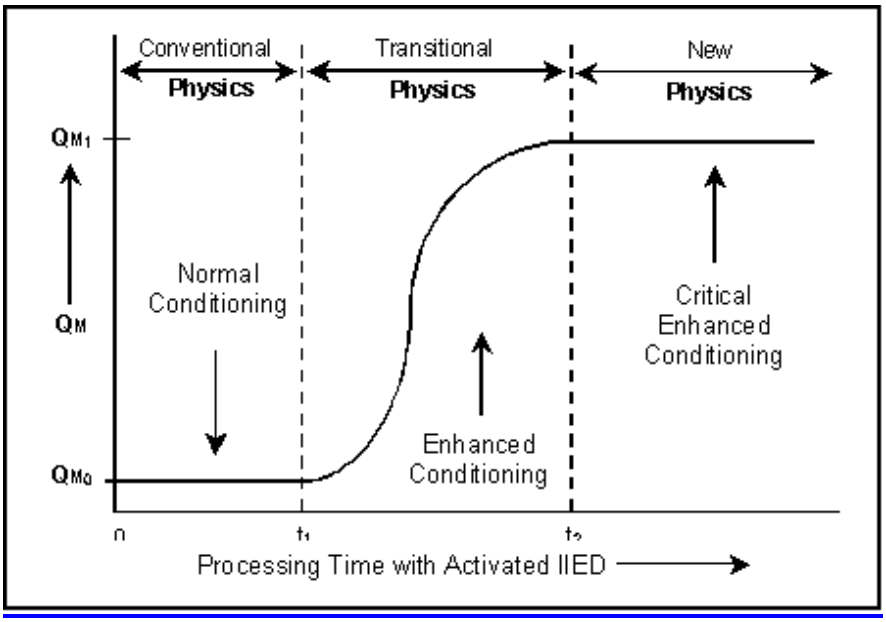
Conditioned Space

Space is a concept in physics and mathematics that is defined as a collection of objects.[137] Physics attempts to describe how these objects relate to each other and how

they interact, including the space between and within the objects, referred to as the vacuum.[138] One might assume that the vacuum is empty, but it actually contains dense energy potential whose properties and functioning have been a mystery to modern science for many years.[139] In physics, normal space is measured by its gauge, which refers to the specific properties of the magnetic field.[140] Normal space, which is called U{1}-gauge space, has both magnetic and electric properties. The magnetics function as dipoles (a pair of equal and opposite magnetic charges), the electrics function as monopoles (single charges) and the vacuum is unstructured and chaotic.[141] This has no basic effect on physical space in the universe. [142]

Conditioned space is space in which the gauge symmetry functions at a more coherent and ordered level than normal U{1} gauge symmetry. This is called the SU{2} gauge symmetry level. In SU{2} gauge symmetry, the electrics continue to function as monopoles, but the magnetics also function as monopoles (as opposed to dipole functioning in U{1} gauge symmetry), and the vacuum, the space between the particles, becomes ordered or more coherent. This changes the way the particles (objects) relate to each other and behave in the space. The gauge symmetry condition of space is connected to the big bang theory of evolution, where matter moved through evolutionary changes from high levels of symmetry (ordered coherence) like SU{2}to lower levels of symmetry, continuing lower to the current U(1) level of symmetry.[143] Human intention can significantly influence physical reality in this higher SU{2} level of gauge symmetry in the conditioned space. [144] See Figure 4.

Figure 4. The Physical Qualitative Magnitude Changes with IIED Processing



Note: As processing time increases, the gauge symmetry of space becomes increasingly coherent. From Tiler, W. A. & Dibble, W. E. *On the "Conditioning" process for an ITC lab and other sacred spaces.* Retrieved April 18, 2004, from http://www.worlditc.org/f_08_tiller_conditioning_process.htm

Dr. Tiller has demonstrated through research that the conditioning of space is a critical variable in the study of the impact of intention on physical reality. Space can be conditioned through human intention, and will remain conditioned past active conditioning, if active conditioning occurs over a three-month or longer period of time.[145] It is not yet known how long the conditioning of space (the ordered coherence of the particles) remains in the space. Dr. Tiller and his colleagues have conditioned six laboratory spaces to date, with one space remaining in the conditioned state for over a year after the removal of the IIED. In this stable conditioned space, Dr Tiller has conducted forced air convection research that demonstrates that the conditioning generates anomalous results, even in the absence of an IIED generating an intention.[146]

Future research focused on the mechanisms of conditioning will suggest to us ways in which we can use this knowledge to benefit humankind.

Tiller and his colleagues have carried out three specific target experiments to date, plus research on the phenomena of "conditioned space" that began to manifest in the first set of experiments. Each of the experiments utilized an Intention Imprinted Electronic Device (IIED) imprinted with a specific intention, as well as a device that was not imprinted with the intention (the control). In all the experiments, a robust effect occurred at the targets with the imprinted IIED compared to the targets with the control device.[147] These studies confirm Tiller's theory about the potential for intention, as an energetic information pattern, to impact physical reality. The robust results attained to date call attention to the portion of his model where intention needs to be in harmony with the person's spirit, as these target experiments have not been directed at humans. It may be for inanimate and animate objects, as well as humans, that the intention needs to be consistent with Tiller's divine order,[148] McTaggerts universal field of consciousness,[149] or Bohm's explicate order.[150]

The conditioned space experiments that have been carried out indicate that a fundamental restructuring of the actual space occurs surrounding the experiments.[151] Just as inner self-management is thought to increase deltron activity in the individual, thus facilitating the communication of the energetic information patterns (intentions), it appears that conditioning the space of experiments with inanimate target objects also facilitates the communication of the energetic information patterns (intentions), thus increasing the robustness of the results.[152]

Research

Dr. Tiller has conducted research on a variety of "target" materials, utilizing an Intention Imprinted Electrical Device (IIED) to continuously broadcast a specific intention to a specific target.[153] The IIED is imprinted with an intention by four highly self-regulated meditators, becoming a host to the intention, and broadcasting the intention to the target over a specific period of time. The experiments demonstrated a robust effect on: 1) raising and lowering the pH of purified water by at least one full pH unit up or down; 2) an increase in the thermodynamic activity of the enzymes ALP and ATP by 15% to 30%; and 3) an increase in the ATP production in fruit fly larvae, reducing the maturation time of the fruit fly by 25%.[154] While conducting these experiments, Dr Tiller noticed that the space became "conditioned", that is, the gauge symmetry of the space changed. Gauge symmetry is a measure of the electromagnetic properties of the space. After approximately three months of continued use of an IIED in a designated laboratory space, the electromagnetic gauge symmetry changes from what we know as normal, or U{1} gauge symmetry, to SU{2} gauge symmetry, which is a higher, more ordered gauge symmetry.[155] This change in gauge symmetry, or conditioning, facilitates the impact of the intention on the target. It is speculated that as the electromagnetics increase in coherence, the impact on the target increases. In other words, the energy (thermodynamic potential) of the intention then significantly influences its target, regardless of the nature (inanimate or animate) of the target.[156] Dr. Tiller postulates that the longer the IIED is broadcasting an intention in a space, the more the gauge symmetry of the space changes via the continued and sustained broadcast of conscious intention.[157]

Summary

Additional research evaluating the impact of intention broadcast from an IIED on humans will give the scientific community additional information to understand our world. The research to date confirms Tiller's model, raises questions about our basic understanding of quantum physics, and holds exciting potential for beneficial application to a variety of human conditions. Intention as a research variable has been difficult for researchers to consistently quantify or qualify, and much of the research to date other than Dr. Tillers has been criticized for design flaws; for weak, inconclusive results; or for being too far beyond the normal acceptable boundaries of traditional medical research. Speaking of intention, Radin says "…the mind's will can do things that—according to prevailing scientific theories—it isn't supposed to be able to do".[158] The state of research on intention currently attempts scientifically to validate and duplicate results indicating that intention does or does not have an impact on animate and inanimate objects. Research and evaluation of the universal field of consciousness just may be part of the "how" of intention. Both aspects of intention certainly merit further study.

With current and continuing confirmation from new research, the scientific and lay community will come to understand that we are not as individual and separate as we appear, but that the intentions, attitudes, and the personal energy fields of all play a role in creating the reality that we experience daily, including our individual and collective states of health. This holds much promise for the future, as we look for new ways to understand the mechanics of our universe and use our understanding of these processes to benefit all mankind. Future research will inform us as to the effect of intention broadcast in conditioned space on animate objects, including humans. This study examines the

effect of a specifically designed broadcast intention on two of the most common stress related illnesses--depression and anxiety.

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CHAPTER 2:
METHODOLOGY

Dr. William A. Tiller's pioneering work in the field of consciousness utilizing an Intentionally Imprinted Electric Device (IIED)[1, 2] is the basis for the present study. Dr. Tiller has successfully performed a variety of experiments demonstrating that consciousness can be imprinted on a device, which then broadcasts the imprinted intention and impacts the target subject. The objective of this study was to evaluate the impact of an Intention-Imprinted Electronic Device (IIED) on depression and anxiety in the general population.

This study evaluated the impact of an Intention-Imprinted Electronic Device (IIED) imprinted with an intention for improved health on depression and anxiety in three different groups. The intention statements used for each of the three groups are provided in Appendixes A, B and C. A pilot project was conducted initially for one month, while Group A intervention was for three months, and Group B intervention was for eight months. Group A subjects were randomly assigned into the control or intervention groups, while the participants in Group B all received the intervention.

Research has shown that there is no known risk to subjects from positive intentions.[3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33] Although research has suggested that there may be risks to subjects with certain forms of intercessory prayer,[34] this study utilized positive intention imprinted and broadcast from an IIED, not intercessory prayer.

This study utilized an Intentionally Imprinted Electrical Device (IIED) imprinted with a specific intention for each group. The names and addresses of the intervention

group were scrolled continuously on a computer screen with the intention broadcast by the IIED throughout the intervention period. The IIED and the computer with the names and addresses of the intervention group subjects were both in the same location, either in an office area (Group A) or in an empty room (Group B). For the Group A control group, the names and addresses were scrolled continuously on a computer screen, but there was no intention on the computer screen and there was no IIED in the vicinity of the computer broadcasting intentions. The results were measured using pre- and post-intervention indicators on the State-Trait Anxiety Inventory for Adults and the Zung Self-Rating Depression Scale. Both tests are self-report measures that are widely used to identify anxiety and depression. The State-Trait Anxiety Inventory for adults differentiates between state anxiety ("I am anxious now") and trait anxiety ("I am generally anxious"). Depression and anxiety have been shown to be precursors to disease, so that decreasing anxiety and depression may be assumed to decrease disease and/or increase health.

Hypothesis and Variable

The hypotheses for this study are contained in table 3:

Table 3. Hypotheses.

Hypothesis	Null Hypothesis
The intention will have a significant effect on anxiety and depression when broadcast in a conditioned space (Pilot Project, Groups A and B).	The intention will have a significant effect on anxiety and depression when scrolled on a computer screen in unconditioned space without an IIED (Groups A and B only).

The variables for this study are contained in table 4:

Table 4. Variables.

Independent Variable	Dependent Variable
The independent variable for this study was the intention broadcast by an Intention Imprinted Electronic Device (IIED). Group A participants were randomly assigned to either the intervention group or the control group. Group B received the intention with no control group.	The dependent variables of the study were the state and trait anxiety scores on the State-Trait Anxiety Inventory for adults and the scores on the Zung Self-Rating Depression Scale. Baseline and post-intervention scores were collected for each group.

Subjects and Design

Interventions were conducted at one-month (pilot group), three-month (Group A), and eight-month (Group B) time intervals. Subjects who agreed to participate in each group were also offered the opportunity to participate in the next group. For example, those participants who completed participation in the pilot group, the one-month intervention, were also offered the opportunity to participate in Group A, the three-month intervention. Those who completed participation in Group A, the three-month intervention, were also offered the opportunity to participate in Group B, the eight-month intervention. Efficacy of the intervention was assessed using a mixed analysis of

variance with one between groups and one within groups factor comparing the pre-and post-test scores on the State-Trait Anxiety Inventory for Adults (See Appendix D) and the Zung Self-Rating Scale for Depression (see Appendix E).

The study population consisted of volunteers from the medical practice of Roy Kerry, M.D., the chiropractic practice of Terry Cooper D.C., the emotional healing practice of Nancy Joy Hefron, and the medical intuition class of Lori Wilson, M.S.W. Dr. Kerry is an Ear, Nose and Throat Allergist and Facial Plastic Surgeon specializing in allergy and environmental medicine, who has been in practice in Greenville, PA., for 30 years. His practice consists of patients primarily with allergenic and environmental toxicities. Participants were solicited from among patients who had been to see Dr. Kerry at least once from September 1, 2002 to August 30, 2003. Dr. Cooper is a chiropractor specializing in sports medicine who has been in practice in Cedar Rapids, Iowa, for over 10 years. Study participants were solicited from Dr. Cooper's active patient list in September, 2003. Nancy Joy Hefron has been an emotional healer for over 20 years; study participants were solicited from her newsletter mailing list in September, 2003. Lori Wilson has been teaching medical intuition as part of her Inner Access 101 series of classes for over 10 years, and students from her spring 2003 class were invited to join the study.

The inclusion, exclusion, and discontinuation criteria for participants are listed in table 5:

Table 5. Participant Criteria.

Inclusion Criteria	Exclusion Criteria	Discontinuation Criteria
Age range from 18 years and older Willing to participate in study via signed consent Must be able to read English at a 6th grade level Must complete both pre- and post-tests	Under 18 No current address or unable to locate Unable to read or comprehend the pre- and post-tests Incomplete pre- or post-tests	A subject may decline participation at anytime during the study at his/her request

HIPAA Compliance

The federal privacy regulations for human subjects research in the Health Insurance Portability and Accountability Act of 1996 (HIPAA) were implemented in part in April, 2003. The rules apply to health plans, health care clearinghouses, and certain health care providers, with respect to the rights of individuals who are the subjects of information-sharing, procedures for the exercise of those rights, and the authorized and required uses and disclosures of the information. HIPAA regulations are specifically designed to regulate the use and disclosure of subjects' Protected Health Information (PHI). Compliance with HIPAA was considered for this study, since the study was scheduled to commence after the final HIPAA regulations were to be implemented in October, 2003. The final regulations were published in the Federal Register on August,

14, 2002 and can be downloaded from the Health and Human Services Office for Civil Rights at http://www.hhs.gov/ocr/hipaa. See Appendix F for HIPAA Transition Rules.

An application for waiver (see Appendix G) from the applicable HIPAA rules was granted by the Holos University Institutional Review Board (see Appendix H for requirements regarding waivers). Although the waiver was granted, this research study was conducted in compliance with all HIPAA regulations, and protects the privacy of the individuals who chose to participate. The initial invitation to participate was extended by Dr. Kerry (see Appendix I), Dr. Cooper, Nancy Joy Hefron, and by the principal investigator during Lori Wilson's medical intuition class. Those who wished to participate then made themselves known to the principal investigator via postcard and sign-up sheet.

During the study, none of the involved health providers or their staff members knew who participated and who did not. Nor did the principal investigator at any time, request or have access to the protected health information at the health care practitioners' offices or from the volunteers themselves. All study data and instruments have been kept in a locked file in the principal investigator's home office, and will be destroyed in February 2006, one year after the study is completed.

Study Design

All potential participants in Groups A and B received an invitation letter from the principal investigator, (see Appendix J), along with a letter of introduction from their healthcare practitioner (Group A only) and a reply postcard (see Appendix K). Those in the medical intuition class received a group invitation and explanation of the research from the principal investigator at the end of a class, and were offered the opportunity to

sign up and provide demographic information to the principal investigator. Invitation letters were mailed to all potential study participants no later than 6 weeks prior to the start of each intervention period. Participants had 2 weeks to reply to the invitation. During that time the principal investigator was available by phone and email to answer questions about participation.

The IIED/computer and computer without IIED were focused on participants for one month (Pilot Group), three months (Group A), or eight months (Group B). Those members who agreed to participate in the Pilot Group and Group A were randomly assigned to one of the two study conditions:

Condition One: IIED imprinted with intention and with computer scrolling intention along with names and addresses

Condition Two: Computer scrolling names and addresses without intention and without an IIED.

Participants were randomly assigned to a particular condition by the research assistant, with the exception that volunteers who reside in the same household were grouped together in the same condition. For Group A, those volunteers who completed participation in Group A were mailed an invitation (see Appendix L) to participate in Group B. Those who wished to participate returned a postcard (see Appendix M). All Group A participants were assigned to Condition One. As a result of the Group B participants' previous assignment to Condition One (intervention group) or Condition Two (control group), Group B participants actually received a total of either 8 months (56 participants), 11 months (47 participants) or 12 months of intervention (7 participants). The small number of Pilot Project subjects who participated in Group B actually received

12-months of intervention, however, due to their small size (7) they were combined with the 11-month group for analysis purposes.

All participants received the welcome letter with instructions for completing the consent and pre-tests from the principal investigator (see Appendix N), the consent form (see Appendix O), the pre-tests (see Appendixes D and E) with a self-addressed stamped envelope and post-tests with a self-addressed stamped envelope, along with information on how to contact the principal investigator if there were any questions. All test subjects were assigned a number and tests were sent using the number only. The participant's name was on the mailing envelope, but the return envelope had only the investigator's address and return address, and the test had only the assigned number. Pre- and post-tests were to be completed within two weeks of receiving the materials. The principal investigator scored tests and then gave the raw data to the statistician for analysis.

Procedure

This double blind study used Intentionally Imprinted Electrical Devices (IIED) with a computer and one computer without an IIED to evaluate the impact of broadcast intentions on the health status of an adult population. The results were measured by pre- and post-intervention indicators on the Zung Self-Rating Depression Scale and the State-Trait Anxiety Inventory for adults. The IIED/computer and computer without the IIED was focused on randomly assigned individuals for one-month, three-month, and eight-month intervals. The time frames were as follows:

Pilot Group: June 15, 2003 to July 15, 2003

Group A: November 1, 2003, to January 31, 2004.

Group B: May 17, 2004 to January 17, 2005

Post-tests were mailed within one week of the end date of the intervention period. Participants completed and returned post-tests up to 6 weeks after the intervention ended.

The names and addresses of those in each intervention group along with that group's intention statement were on a password protected computer disk and scrolled continuously on a computer screen. The names and addresses of those in the control group were also on a password protected computer disk. Only the principal researcher, dissertation committee members assisting with the study, and research assistants had access to the passwords.

The Pilot Group and Group A were conducted at a lab in McLouth, Kansas previously used for IIED experiments on inanimate objects. The lab was at the home office of Dr. Robert Nunley, who was at that time on the dissertation committee. Dr. Nunley resigned from the committee effective March 28, 2004. The imprinted IIED has been on location in use in Kansas since December 31, 2002. The device was originally imprinted via Dr. Tiller's own imprinting process in December, 2002, and has been re-imprinted using the same process every three months since that time. Group B was conducted at a lab in Fair Grove, Missouri, at Holos University Graduate Seminary. The specific intentions (see Appendices A-C) for each group were imprinted into the IIEDs by four highly self-regulated people acting from a deep meditative state.[35] Following their work to imprint the intentions into an IIED, the device then became the host for the specific intention directed at a specific target, acting as a surrogate for the people, in effect transferring the specific intention to the experimental site[36].

At the beginning of the intervention periods, (June 15, 2003, November 1, 2003, and May 17, 2004), the password protected names and addresses of all volunteers who consented to participate were randomly assigned to Condition One or Condition Two, placed on a computer disk and loaded on to either an imprinted IIED/computer with intention (Pilot Group, Group A, and Group B) or on to a computer with no intention and without an IIED (Pilot Group and Group A). These remained in place until the end of the intervention periods (July 15, 2003, January 31, 2004, and January 17, 2005). The intervention group demographics (names and addresses) and intention were scrolled on a computer screen in close proximity to the IIED for a period of one, three or eight months. The control group demographics were scrolled on a computer screen that was not in proximity to the IIED for a period of one or three months. The computer used for the control groups for the Pilot Project and Group A was approximately 375 miles away from the IIED.

The pre-test and post-test measures were completed 1 week prior to the study start date, and completed again 1 week after the study end date. The measurements used were the Zung Self-Rating Depression Scale published by GlaxcoWellcome (www.fpnotebook.com/PSY85.htm) and the State-Trait Anxiety Inventory for Adults published by Mind Garden (www.mindgarden.com). The test scores were statistically analyzed by multivariate analysis to measure differences (if any) between the pre- and post-test scores in aggregate. No individual analysis of variance was performed.

Post Intervention

After the study period, the control groups had the opportunity to receive the full intervention of an imprinted IIED/computer for one month (Pilot Group) or three months

(Group A). Pilot Group controls received the intervention from September 15, 2003 to October 15, 2003. Group A controls received the intervention from May 17, 2004 to August 17, 2004. As a thank you for participation, all volunteers who completed both the pre- and post-tests received a cassette tape on relaxation by C. Norman Shealy, M.D. after the post-test was returned. After Group B, all participants received a two-page summary and a thank you letter (see Appendix P).

Material, Apparatus, and Tests

The Intentionally Imprinted Electronic Devices are host devices consisting of a physical case, measuring 7 inches by 3 inches by 1 inch, which houses the electronics. The electric circuits are simple, involving only an EEPROM (Electrically Erasable Programmable Read Only Memory) component (not conventionally connected to the circuit), an oscillator component (1-10 MHz range), no intentional antenna, and a battery power supply.[37] The radiated electrical power of this device is less than 1 microwatt and they are generally placed 3-6 inches from the target subject, which, in this study, was the computer. There is no known risk when using this device.[38] This design utilizes the consciousness of specially trained individuals to imprint the specific device so that another dimension is added to the electron properties of the host device.[39]

The computers are host devices that will act as controls. The names and addresses of those in the intervention group along with the intention statement were on a password protected computer disk and scrolled continuously on one computer screen in one location, while the names and addresses of those selected randomly as controls were on a password protected computer disk and scrolled continuously on a computer screen in a different location. Two Gateway 233 computers were programmed to continuously scroll

names and addresses. The computer used for the intervention also scrolled the intention at the beginning of the demographics, while the computer used for the control group did not have the intention. The computer scrolling the names and addresses of the control group (Pilot Group and Group A) was in an office in Cedar Rapids, Iowa while the intervention group IIED and computer were in an office in McLouth, Kansas, approximately 375 miles apart. The computer used for Group B (intervention only) was located at Holos University Graduate Seminary in Fair Grove, Missouri.

The names and addresses were in a program that ran under macro commands that booted up automatically, so that no names or other information were visible on the screen. In McLouth, Kansas, one of the study monitors, Dr. Robert Nunley, had access to the computer itself, up to the operating system level to make sure that it was restarted after a prolonged power outage. A green light would be displayed on the screen when the list that is being cycled through was running as it should and a red light displayed when it was not. Dr. Nunley monitored the computer daily and, when the red light came on, rebooted the system until the green light came on and stayed on. The computer had to be rebooted twice during the Group A intervention period. As an additional protection, all devices used at all locations were locked in offices or rooms with limited access. As an additional unplanned design feature, Dr. Nunley read the names of all participants in Group A every morning to classical music, stating the name and the phrase "be well" after each name. The IIED and computer for Group B was in an empty room at Holos University Graduate Seminary in Fair Grove, Missouri, and was monitored by a research assistant at that facility in the same manner as the monitoring of the device for the previous intervention trials.

The data were analyzed to evaluate the hypothesis that intention broadcast from an IIED may improve health by decreasing anxiety and depression in human subjects. Efficacy was assessed by comparing the pre-and post-test scores on the State-Trait Anxiety Inventory for Adults and the Zung Self-Rating Scale for Depression. The statistician hired specifically for this study utilized multivariate analysis to calculate any differences pre- and post- for both the intervention and the control group to assess statistical significance.

Validity and Reliability of Measurements

The Zung Self-Rating Depression Scale (Zung) and the State-Trait Anxiety Inventory for Adults (STAI) were chosen for his study due to their demonstrated reliability and validity. Both instruments have been utilized extensively to measure anxiety and depression, and have widespread acceptance in both the research and medical community. They were also selected for their simplicity, user-friendliness, availability, and ease of scoring. Both measures are credible assessments of the impact of the IIED on anxiety and depression.

The order of testing materials was determined following the recommendations of Spielberger (1983), who advises that the state anxiety test, or STAI Y-1, be administered first, followed by the STAI Y-2. This is done to avoid the emotional climate that may be established if the STAI Y-2 is administered first. In this study, the STAI Y-1 was the first page of the testing packet, the STAI Y-2 was second, and the Zung test for Depression was the third page of the testing packet.

The State-Trait Anxiety Inventory for Adults

The State-Trait Anxiety Inventory for adults (STAI) by Charles D. Spielberger is the most widely used self-report of anxiety in America today[40]. It assesses anxiety at a specific point in time and as a general personality trait. The STAI differentiates between the temporary condition of "state anxiety" (S-scale, or Y-1) and the more general and long-standing condition of "trait anxiety" (T-scale, or Y-2). The two separate self-report scales consist of twenty questions each that evaluate how participants feel right now (state anxiety), and how they feel in general (trait anxiety). The essential qualities evaluated by the STAI Y-1 scale are feelings of apprehension, tension, nervousness, and worry. Scores on the STAI Y-1 scale increase in response to physical danger and psychological stress, and decrease as a result of relaxation training. On the STAI Y-2 scale, consistent with the trait anxiety construct, psychoneurotic and depressed patients generally have higher scores. The reliability and validity of the STAI has been well established over the past 3 decades.[41] The STAI test items were required to meet internal validity testing at each stage of development, and over the years concurrent, convergent, divergent, and construct validity have been demonstrated through thousands of research studies.[42] The alpha coefficients, a more meaningful measure of internal consistency than test-retest correlations, provide an index of reliability for both the S-scale and the T-scale. The median S-scale alpha coefficient was .92 for the subject group of working adults, students, and the military. For the same subject group, the T-scale median coefficient was .90.[43]

The Zung Self Rating Depression Scale

The Zung Self-Rating Depression Scale (Zung) is one of the most widely used adult depression screening instruments and is recognized by physicians and clinicians worldwide. About 82% of persons with scores on the Zung of 55 or more have major depression, as defined by the DSM IV criteria. The Zung was designed to screen depression and mood, but is also used as a tool to track a client's progress in therapy over time. The Zung is short and simple, quantitative rather than qualitative, and is self-administered. The Zung includes 20 items that reflect the following diagnostic criteria: pervasive affect, physiological equivalents or concomitants, and psychological concomitants. Ten of the items are worded symptomatically positive, and ten are worded symptomatically negative.[44] The Zung correlated well (0.69) with the treating physician's global rating in 26 depressed outpatients in other studies.[45] The Zung Scale had the highest positive predictive value (93%) with regard to internal consistency and sensitivity. Predictive comparisons were made between the overall scores on the Beck Depression Scale, Hamilton Scale of Depression, Zung and a visual analogue rating scale in a group of depressed patients initially and at one, two and three weeks. Significant correlations between the global scores were found on these depression scales.[46]

These two instruments, the Zung Self-Rating Depression Scale (Zung) and the State-Trait Anxiety Inventory for Adults (STAI) were selected for this study due to their demonstrated reliability and validity, their widespread acceptance in both the research and medical community, their user-friendliness, and their availability as well as ease of scoring. Both measures served as useful tools in assessing the impact of the IIED on anxiety and depression.

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CHAPTER 3:
RESULTS

The study involved three different intervention time periods with overlapping participants in each group. The groups were designated as Pilot Project (one-month intervention), Group A (three-month intervention), and Group B (eight-month intervention). Pilot Project results are available in Appendix Q, with raw test scores available in Appendix R. Raw test scores for Group A are available in Appendix S (control group) and Appendix T (intervention group). Raw scores for Group B are available in Appendix U. Results were analyzed by comparing pre and post-test differences for Groups A and B, as well as the differences between the control and intervention group in Group A. All Group B participants were also in Group A. Therefore, Group B pre and post-test results were also analyzed from the first intervention period to the last intervention period. Raw test scores for Group B participants who received a total of 8 months of intervention are available in Appendix V. Raw test scores for Group B participants who received a total of 11 months of intervention are available in Appendix W.

Subject Selection

Subjects were invited to participate from the practices of four healthcare providers: a medical CAM (complimentary and alternative medicine) allergy practice, a chiropractic practice, counseling practice and a medical intuition education class. The subjects that were solicited for participation are a subset of the general population that is presumed to be more open to CAM type modalities, given the practices of the selected healthcare providers and educational interests in medical intuition. When considering the results,

subject bias needs to be considered, as those who volunteered to participate may have been more open to CAM type intervention, holistic modalities, and new approaches to health improvement. Receptivity and openness to new methods in this sub set of the population should be considered when considering the results. That being said, the volunteer rate was low and the attrition rate high for the participants in this research. A total of 1576 individuals were invited to participate, and of these 186 participants or 12% completed one or more of the three intervention trials. Table 6 presents the numbers of participants by practice type:

Table 6. Subjects Invited Versus Participated by Practice Type.

Practice Type	Number Invited	Number Participated	Percent Participation
CAM Allergy Practice	700	147	21%
Chiropractic Practice	520	55	11%
Counseling Practice	300	41	14%
Medical Intuition Class	56	43	77%

The levels of participation could be due to a variety of factors. The highest level of participation came from a face to face request made by the principle investigator, in a situation where she was somewhat known to those in the class. Subject recruitment for this type of new research may be most effective when a face to face appeal for participation is given. The next highest rate came from the physician practice. It could be

speculated that these patients are more ill and may have had less success with traditional modalities and thus may be more open to trying new alternative methods. Dr. Kerry indicated that he felt that his patients may have been more open to participating as they have tried many different methods to deal with their environmental toxicities and other allergies, many times without much success. The third highest level of participation came from the emotional healing/counseling practice, where many of the participants knew the P.I. from different social circles. The least amount of participation came from the chiropractors practice. Although they received a cover letter from their chiropractor, most of them did not know the P.I., and one could speculate that their health issues may not have been as serious as those who had sought a CAM physician for care. If it is true that their health issues were not as serious, then they may not have been as motivated to participate.

In each of the intervention trials, 46% to 79% of those who indicated interest in participating actually completed both the pre and post-test. There were eight subjects in Groups A and B who did not answer all the questions on the pre-test or post-test. There were 12 subjects, 9 in Group A and 3 in Group B, whose post-test was returned unopened to the principal investigator. There were 139 participants from the three groups (including the pilot project) who did not return either the pre or post-test. Table 7 shows the number of participants, by intervention group, who were invited to participate and who completed both the pre and post-test:

Table 7. Subjects Invited versus Completed in the Pilot Project, Groups A and B.

Group	Invited	Percent Indicating Interest	Received Pre-test	Completed Both Pre And Post-test	Percent Complete
Pilot Project	26	92%	24	11	46%
A	1576	18%	289	182	63%
B	182	76%	139	110	79%

Only 18% or 289 of those invited indicated interest in participating, and of those 289 subjects only 63% completed one or more intervention periods. Some possible reasons for this are: 1) the subjects changed their mind about participating and did not respond rather than notifying the P. I.; 2) the subjects didn't understand the nature of the questions they agreed to answer, and chose not to participate after receiving the questionnaires; 3) the subjects had no personal investment in the study and did not have to do anything to participate beyond the questionnaire, and so may not have taken the time required to participate; 4) the subjects may not have seen or felt a direct benefit from the study; 5) the period of time, especially for Group B, was too long, and the subjects may have forgotten about their participation; 6) Subjects moved and did not forward their new address to the P.I.; 7) The subjects were too busy, and the study was not a priority. For different subjects it was probably a combination of two or more of these factors that led to the high attrition rate between the time subjects volunteered and the time the post-tests were completed.

Group A and B Overview

Interventions were conducted for three-month, and eight-month time intervals. A 2X2 Mixed ANOVA analysis was performed on all three measures (Zung, STAI-Y1 and STAI-Y2). The change over time of the intervention group from the pre-test to the post-test on the STAI Y-1 state anxiety was significant in Group A, $p<.001$, and in Group B (combined), $p<.01$. The pre to post-test result on the STAI-Y2, trait anxiety, was significant in both groups A and B, $p<.001$. The change over time of the intervention group from the pre-test to the post-test on the Zung depression measure was significant in Group A $p<.01$, and for Group B, $p<.001$.

Mean scores on the State Trait Anxiety Inventory for Adults and the Zung Self Rating Scale for Depression at pre and post-test for each of the intervention groups and control groups are presented in Table 8:

Table 8. Pre and Post-test Means by Group.

		Group A		Group B		
		Control	Interven	Total	8 month	11 month
STAI Y-1	Pre	40.148	40.956	40.115	39.589	46.702
	Post	38.750	36.804	37.341	36.375	41.957
	Change	**-1.398**	**-4.152**	**-2.774**	**-3.214**	**-4.745**
STAI Y-2	Pre	41.761	40.641	40.736	40.339	47.340
	Post	40.307	38.163	38.780	37.054	42.468
	Change	**-1.454**	**-2.478**	**-1.956**	**-3.285**	**-4.872**
Zung	Pre	39.284	37.426	37.912	38.179	43.021
	Post	37.455	36.389	36.505	34.464	40.234
	Change	**-1.829**	**-1.037**	**-1.407**	**-3.715**	**-2.787**

In general for both groups, the intervention differences pre and post are larger than the control group differences, except with the Zung Self Test for Depression. For Group A at three months, the intervention group had less of a change in score than did the control group. When looking at Group B, as the intervention time increases, the difference also increases, except, again, with the Zung. The largest difference between Zung pre and post-tests occurs at 8 months.

The differences between the pre and post-test mean scores for two measures were significant for the Group A Zung and the Group B STAI Y-1, $p<.01$, indicating that there is a probability of less than 1 in 100 that the result occurred by chance. The probability

that the result obtained occurred by chance is less than 1 in 1000 for the STAI Y-1 for Group A, the STAI Y-2 for both groups, and the Zung for Group B. See Table 9 for a summary of pre and post-test significance by group:

Table 9. Pre and Post-test Significance.

Test	Group A	Group B
STAI Y-1	.001	.003
STAI Y-2	.000	.000
Zung	.009	.001

In Group A the results were also analyzed between the control group and the intervention group, resulting in the following finding:

Table 10. Results between Groups.

Group	Intervention/Control
A	.089

The three-month intervention (Group A) measures were similar between the control and intervention groups at the pre-test. The intervention group post-test scores showed a marginally significant reduction as compared to the control group reduction on the STAI Y-1, p=.089. The intervention group, after the three month intervention, had a moderate, and potentially statistically significant, reduction in their state anxiety scores, given this type of new research being conducted.

The differences from pre-test to post-test were significant for all the tests and all the groups, while the difference between the Group A result from the control group and the intervention group was marginally significant, indicating that this new type of research is worth pursuing with additional studies.

Group A: Three Month Intervention

A total of 1,576 participants were invited to participate from the practice of:

- Dr. Roy Kerry, M.D., Greenville, Pennsylvania: 700 invited
- Dr. Terri Cooper, D. C., Cedar Rapids, Iowa: 520 invited
- Nancy Joy Hefron, Emotional Healer, Cedar Rapids, Iowa: 300 invited
- Lori Wilson's' medical intuition class, Guelph, Canada, 2003: 56 invited

Of these, 278 agreed to participate, filling out the consents and demographics forms. Of the 278 who consented, 273 returned the pre-tests, and of those, 182 returned the post-test. Those who did not complete a pre or post-test either did not return the test, did not answer all the questions, or the test was returned unopened. See Table 11 for a summary of participants and Appendix B for the specific intention used with Group A.

Table 11. Group A Participants.

	Returned Consent	Returned Pre- Tests	Completed Pre- Tests	Returned Post-Tests	Completed Post-Tests
All Participants	278	273	269	188	182
Intervention Group	139	137	134	90	89
Control Group	139	136	135	98	93

The intervention period for Group A was from December 1, 2003 to February 28, 2004. As noted, 182 of the 278 who agreed to participate completed both the pre and post-tests. Of the 182 who completed, 26 were male and 156 were female. There were 89 in the intervention group (15 M and 74 F) and 93 (11 M and 82 F) in the control group.

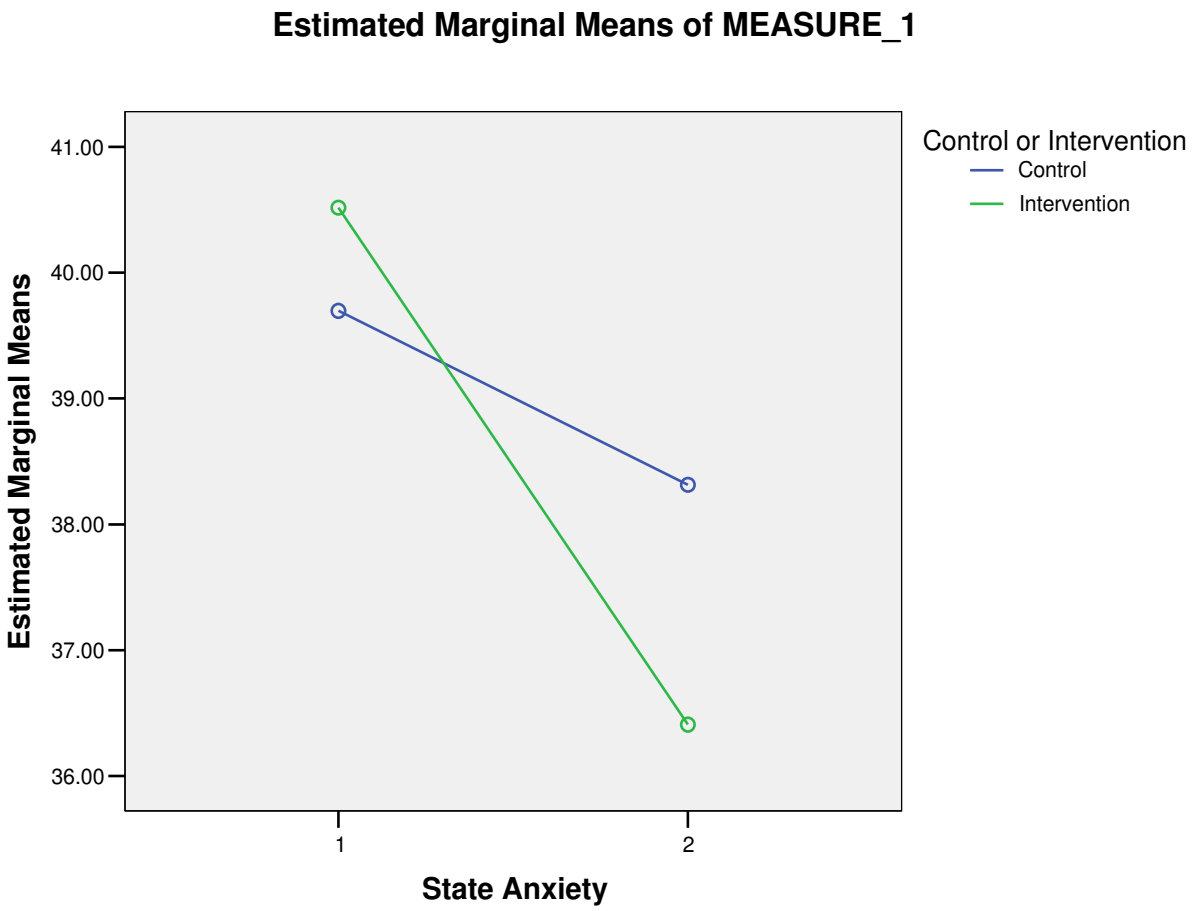
A 2X2 Mixed ANOVA was conducted for all three measures (Zung, STAI-Y1 and STAI-Y2). The interaction of the control group scores versus the intervention group over time (pre-test to post-test) on the STAI Y-1 (state anxiety) measure was the only finding between the groups approaching significance, $p=.089$. The change between the pre and post-test score was significant, $p<.001$ for state anxiety on STAI Y-1, significant, $p<.001$ for trait anxiety on STAI Y-2, and significant for depression on the Zung, $p=.01$. See Table 12 for the STAI Y-1 Mixed Analysis of Variance and Figure 5 for Plot Graph of same:

Table 12. Group A Mixed Analysis of Variance: STAI Y-1.

Tests of Within-Subjects Effects STAI Y-1

Source		df	F	p
STAIY1	Sphericity Assumed	1	11.891	.001
STAIY1 * GRP	Sphericity Assumed	1	2.931	.089

Figure 5. Group A Mixed Analysis of Variance Plot Graph: STAI Y-1.



The control and intervention groups were not significantly different at the pre-test, however, the intervention group showed a marginally significant reduction in their STAI Y-1 scores, while the control group's reduction was not significant. It has been argued that for a new line of research, .10 is considered to be a significant result. The small sample size for this type of research must also be considered in judging significance. When the sample size is considered, the result of the STAI Y-1 approaching significance at the .10 level is fairly compelling (P. Thomlinson, personal communication, May 28, 2004). The change in state anxiety from pre-test to post-test is significant for the 3 month

intervention, p=.001, indicating that the probability of obtaining that result by chance is 1 in 1000.

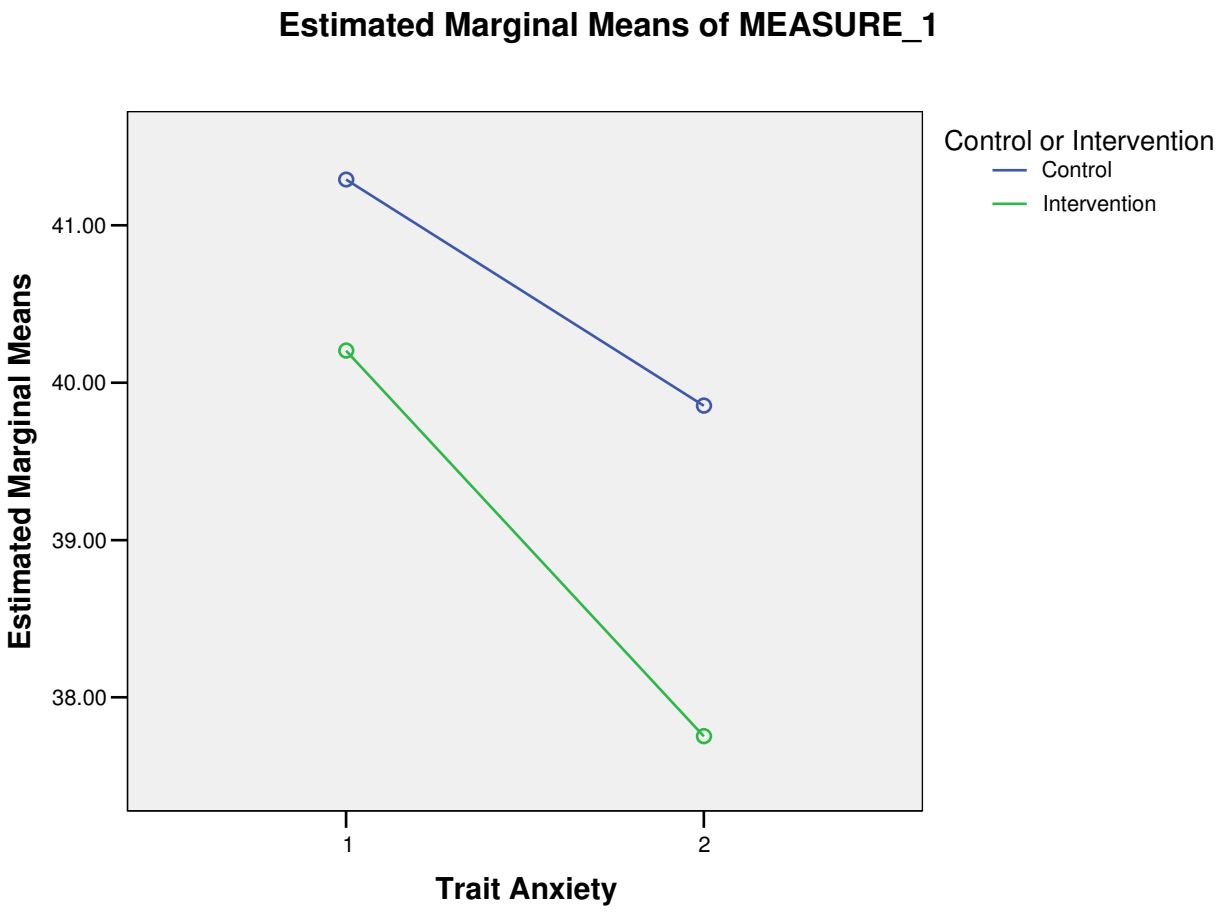
The interaction of the control Group A control versus the intervention group over time (pre-test to post-test) on the STAI Y-2 was not significance, p= .355. See Table 13 for the STAI Y-2 (trait anxiety) Mixed Analysis Of Variance and Figure 6 for the Plot Graph of same:

Table 13. Group A Mixed Analysis of Variance: STAI Y-2.

Tests of Within-Subjects Effects STAY Y-2

Source		df	F	p
STAIY2	Sphericity Assumed	1	12.676	.000
STAIY2 * GRP	Sphericity Assumed	1	.860	.355

Figure 6. Group A Mixed Analysis of Variance Plot Graph: STAI Y-2.



The control and intervention groups were not significantly different at the pre-test, and while each showed a reduction in their STAI Y-2 scores, the reduction was not statistically significant for the control group. The intervention group did have a statistically significant result, $p<.001$, indicating that the probability of this result being obtained by chance is less than 1 in 1000.

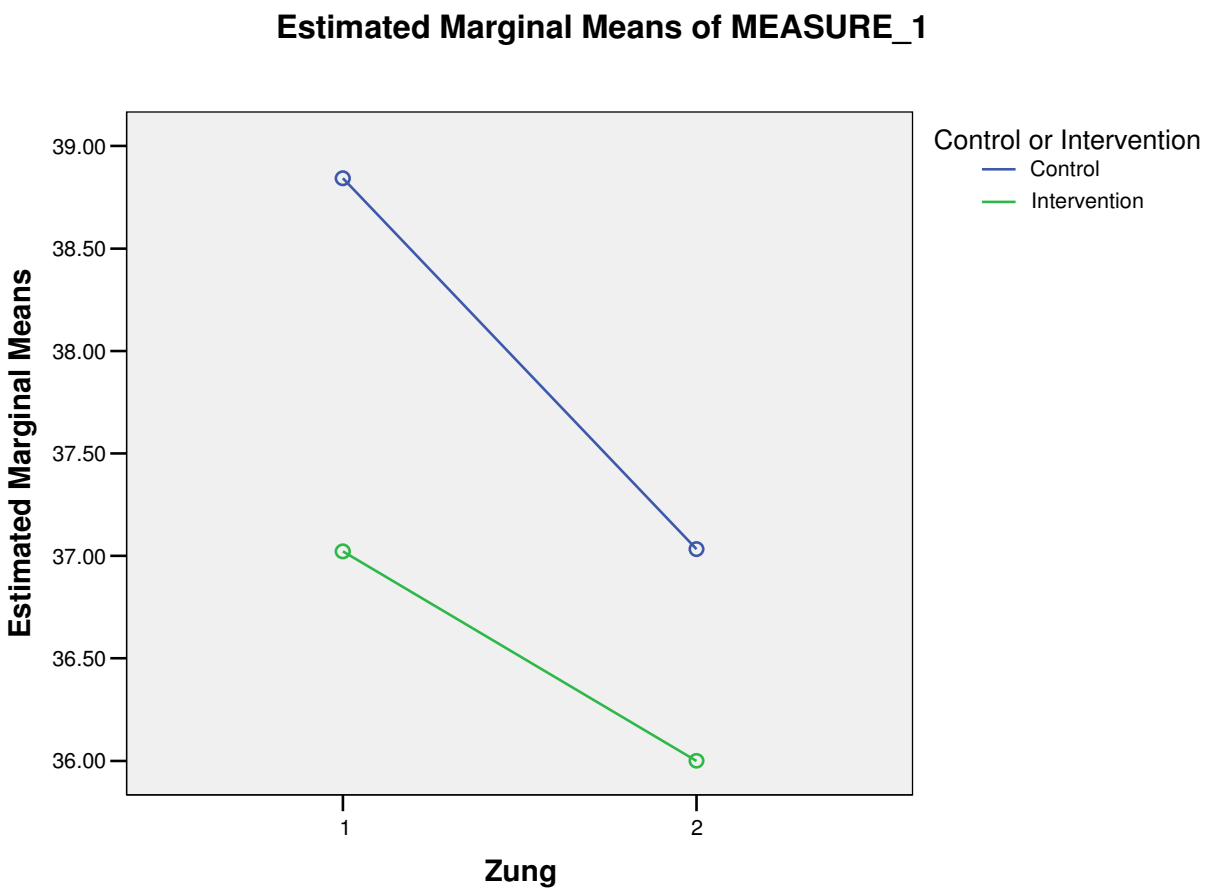
The interaction of the Group A control versus the intervention group over time (pre-test to post-test) on the Zung was not significance, $p= .466$. The change in depression from pre-test to post-test is significant for the 3 month intervention, $p<.01$.

See Table 14 for the Zung Mixed Analysis Of Variance and Figure 7 for the Plot Graph of same:

Table 14. Group A Mixed Analysis of Variance: Zung.

Source		df	F	p
STAIY2	Sphericity Assumed	1	6.910	.009
STAIY2 * GRP	Sphericity Assumed	1	.535	.466

Figure 7. Group A Mixed Analysis of Variance Plot Graph: Zung.



The control and intervention groups were not significantly different at the pre-test. Between the groups there was no significant reduction in their scores on the Zung. The control group showed a slightly greater decrease in the post-test score. See Table 8 for pre and post-test scores by group.

Group B: Eight Month Intervention

Those participants who completed the three-month intervention trial were offered the opportunity to participate in an eight-month trial. Group B, the eight-month

intervention consisted of 110 participants from Group A who completed participation in Group A.

Seven of the participants in Group B were also in the Pilot Project, which received one month of intervention in addition to their Group A participation. . The remaining 103 participants in Group B included 47 participants who received 3 months of Group A intervention, and 56 participants who were in the Group A control group. The Group A control group received the Group B intervention for eight months. The Group A Intervention Group also received the Group B intervention for eight months, giving those participants a total of 11 months of intervention. The seven Pilot Project participants were in both the Group A intervention group and Group B, giving them a total of 12 months of intervention.

The intervention, which began May 17, 2004, initially was to be six months, however, it was anticipated that participants might be less likely to return questionnaires during the winter holidays. Therefore, the trial was extended to January 17, 2005. Of the 182 who completed the Group A three-month intervention, 139 agreed to participate in the Group B eight-month intervention. See Table 15 for a summary of intervention time intervals of Group B participants and Appendix C for the specific intention used with Group B:

Table 15. Intervention Time Intervals of Group B Participants

	8 Months of Intervention	11 Months of Intervention	12 Months of Intervention
Group B Participants	56	47	7

The result is that 110 of the 139 who agreed to participate completed the post-tests for Group B. Of the 110 who completed, 18 were male and 92 were female. All participants were in the intervention group as agreed by Dr. William Tiller and Chair of this dissertation, Dr. C. Norman Shealy. No control group was required because this portion of the study was looking for an effect over time. It was known from Group A that the control group showed no significant effect; therefore, it was not necessary to replicate that finding in the second trial.

The post-test from the three-month intervention period was used as the pre-test for this intervention period, and is actually a mid-point between intervention periods for those participants who were in the Group A intervention group. For Group B, using this mid point as a pre-test allowed us to compare the three month intervention results to the eight month intervention results. The 2X2 Mixed ANOVA analysis was conducted on all three measures (Zung, STAI-Y1 and STAI-Y2). The change between groups A and B was not significant on any of the measures.

When looking over time, Group B was analyzed for the effects of intervention over a period of time between eight to twelve months. Group B was analyzed using the

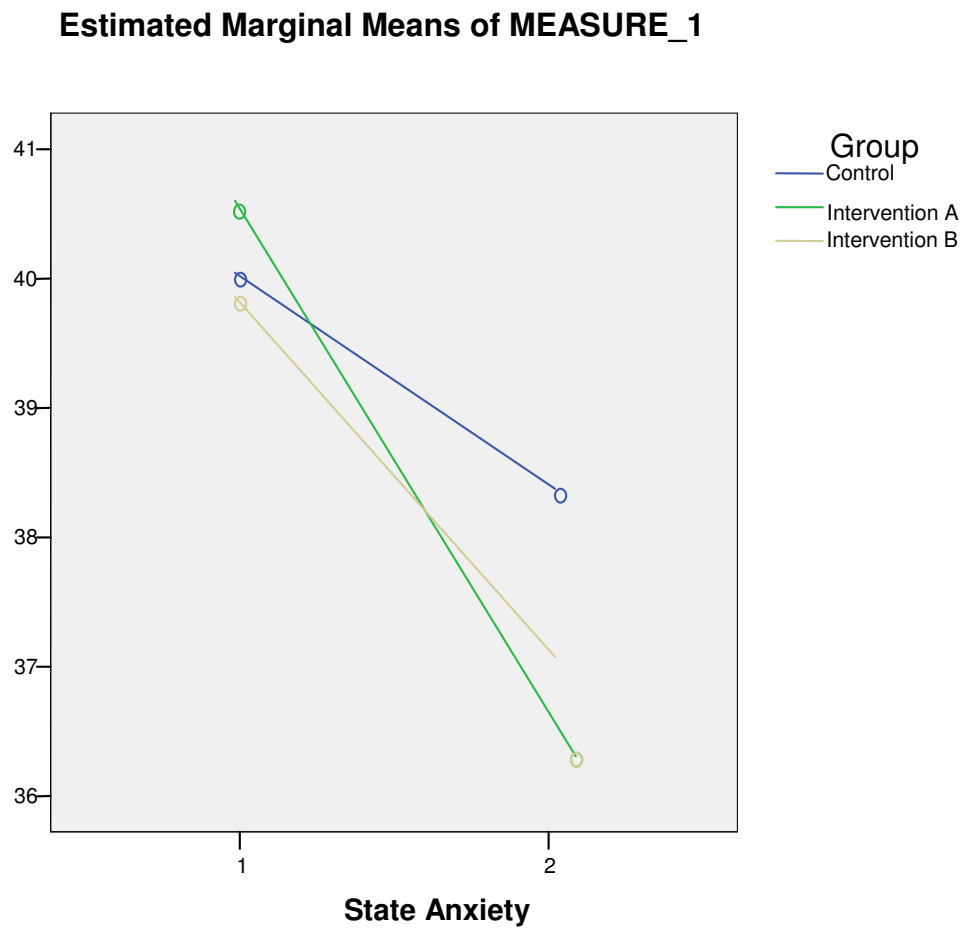
first pre-test taken by participants as a beginning score, and then comparing that to the post-test after the intervention time period of eight months in Group B. There is no control group for a similar period. These will be discussed as groups A and B over time.

The change in the STAI Y-1 measure between the groups was not significant, p=.466 level. For Group B, the change between the pre-test for Group B and the post-test for Group B was significant, p<.01. See Table 16 for the STAI Y-1 Mixed Analysis Of Variance and Figure 8 for the Plot Graph of same.

Table 16. Group B Mixed Analysis of Variance: STAI Y-1.

Group B Tests Within Subjects Effects STAI Y-1				
Source		df	F	p
STAIY1	Sphericity Assumed	1	6.910	.009
STAIY1 * GRP	Sphericity Assumed	2	.535	.466

Figure 8. Group B Mixed Analysis of Variance Plot Graph: STAI Y-1.



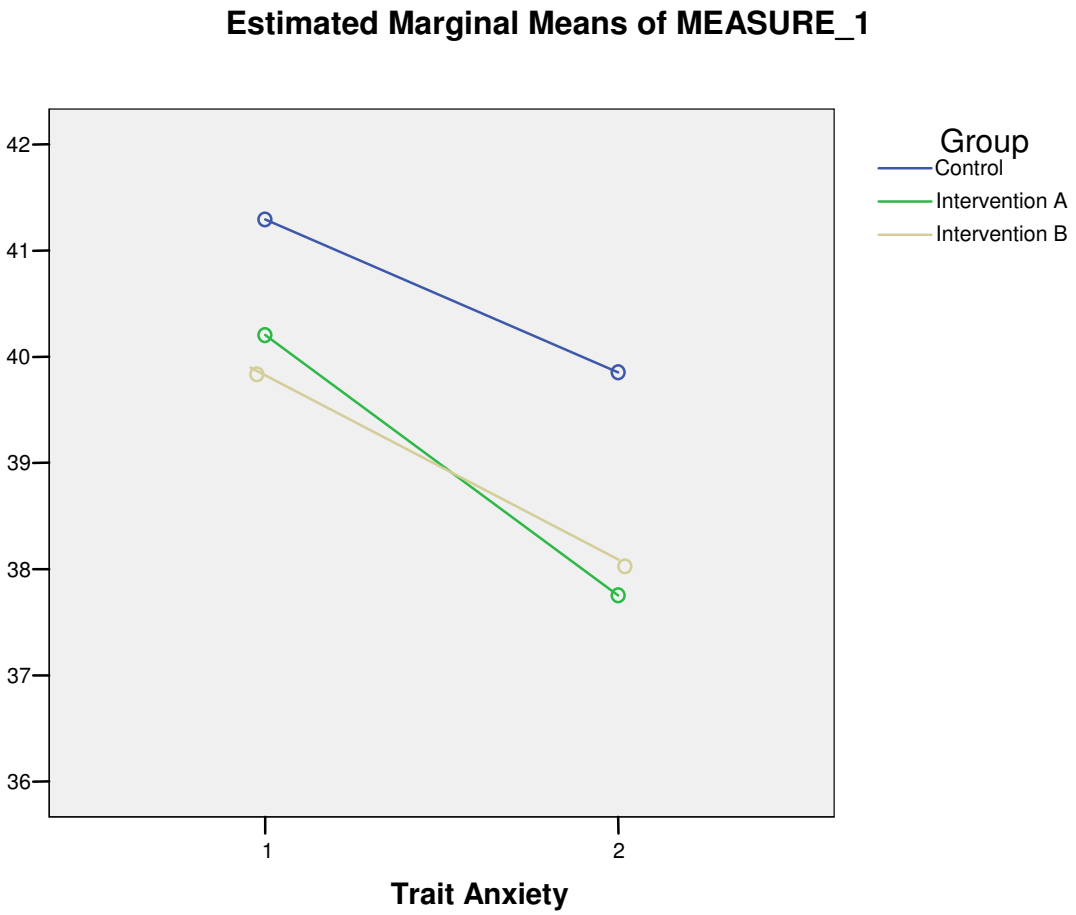
The Group B intervention group showed no significant reduction between the groups in their STAI Y-1 scores.

The same effect occurred with the STAI Y-2 scores. The change between the groups over time (pre-test to post-test) on the STAI Y-2 was not significant, p=.556. For Group B, the change between the pre-test for Group B and the post-test for Group B was significant, p<.001. See Table 17 for the STAI Y-2 Mixed Analysis Of Variance and Figure 9 for the Plot Graph of same:

Table 17. Group B Mixed Analysis of Variance: STAI Y-2.

Group B Tests Within Subjects Effects STAI Y-2				
Source		df	F	p
STAIY2	Sphericity Assumed	1	6.910	.000
STAIY2 * GRP	Sphericity Assumed	2	.588	.556

Figure 9. Group B Mixed Analysis of Variance Plot Graph: STAI Y-2.



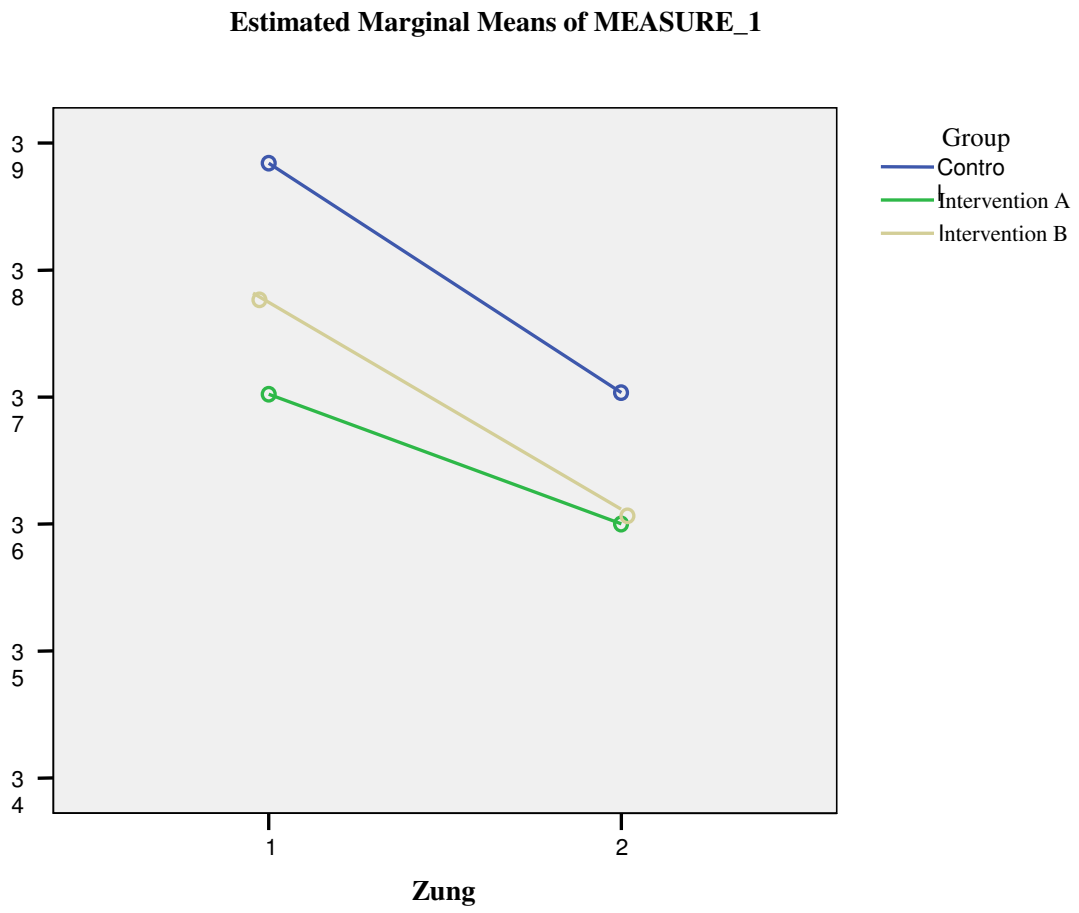
The intervention group showed no significant reduction between the groups in their STAI Y-2 scores.

The change between the groups over time (pre-test to post-test) on the Zung was not significant, p= .556. For Group B, the change between the pre-test for Group B and the post-test for Group B was significant, p=<.01. See Table 18 for the Zung Mixed Analysis Of Variance and Figure 10 for the Plot Graph of same.

Table 18. Group B: Mixed Analysis of Variance: Zung.

Group B Tests Within Subjects Effects Zung				
Source		df	F	p
Zung	Sphericity Assumed	1	8.802	.003
Zung* GRP	Sphericity Assumed	2	.239	.788

Figure 10. Group B Mixed Analysis of Variance Plot Graph: Zung.



There no significant reduction between the groups in their Zung scores. The change Between the groups was not significant, p=.778.

Group A and B Over Time

Subjects who completed participation in each group were also offered the opportunity to participate in the next group. Seven of the participants in the Pilot Group, the one month intervention chose to participate in Group A, the three month intervention. One hundred ten of the participants from Group A, the three month intervention chose to participate in

Group B, the eight month intervention. See Table 24 for a summary of participants in all groups and the intervention time frames:

Table 19. Intervention Time Frames for Participants in Multiple Groups.

Group	Intervention Time Frame	Control	Intervention
Pilot	1 Month 6/15/03-7/15/03	0	7
A	3 Months 12/1/03-2/28/04	56	47
B (Group A Controls)	8 Months 5/17/04-1/17/05	0	56
B (A Intervention + B)	11 Months	0	47
B (Pilot, A Intervention + B)	12 Months	0	7

As a result of participation in multiple groups, there were seven participants who received a total of 12 months of intervention over a period of 18 months. There were 47 participants who received eleven months of intervention, and 56 participants who received eight months of intervention over a period of 13 months. The size of the 12 month intervention group is too small for meaningful analysis, so they were combined with the 11 month group for statistical purposes. There was no significant difference between the 8 month and the 11/12 month intervention groups, however, when participants pre-intervention pre-test scores are compared to their Group B post-test

intervention scores, the following results occur (see Table 20 for the STAI Y-1 Mixed Analysis Of Variance and Figure 11 for the Plot Graph of same):

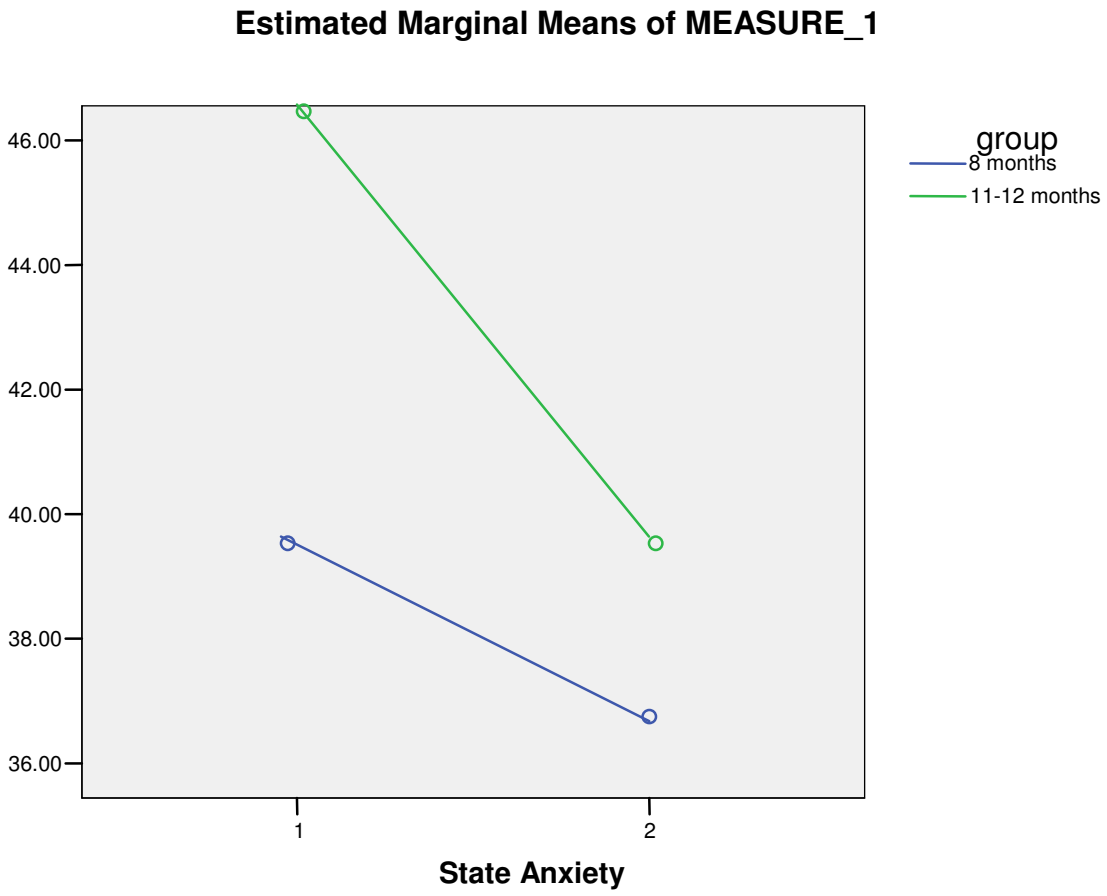
Table 20. Multiple Group Mixed Analysis of Variance: STAI Y-1.

Tests of Within-Subjects Effects STAY Y-1

Source		df	F	p
STAIY1	Sphericity Assumed	1	8.923	.003
STAIY1 * GRP	Sphericity Assumed	1	.139	.710

The difference in the pre-test score and the post-test score on the state anxiety measure, STAI Y-1 for the groups are significant, $p<.01$.

Figure 11. Multiple Group Mixed Analysis of Variance Plot Graph: STAI Y-1.



Although the differences between the pre and post-test scores are significant, the differences between the 8 month and the 11 month intervention on the STAI Y-1 are not.

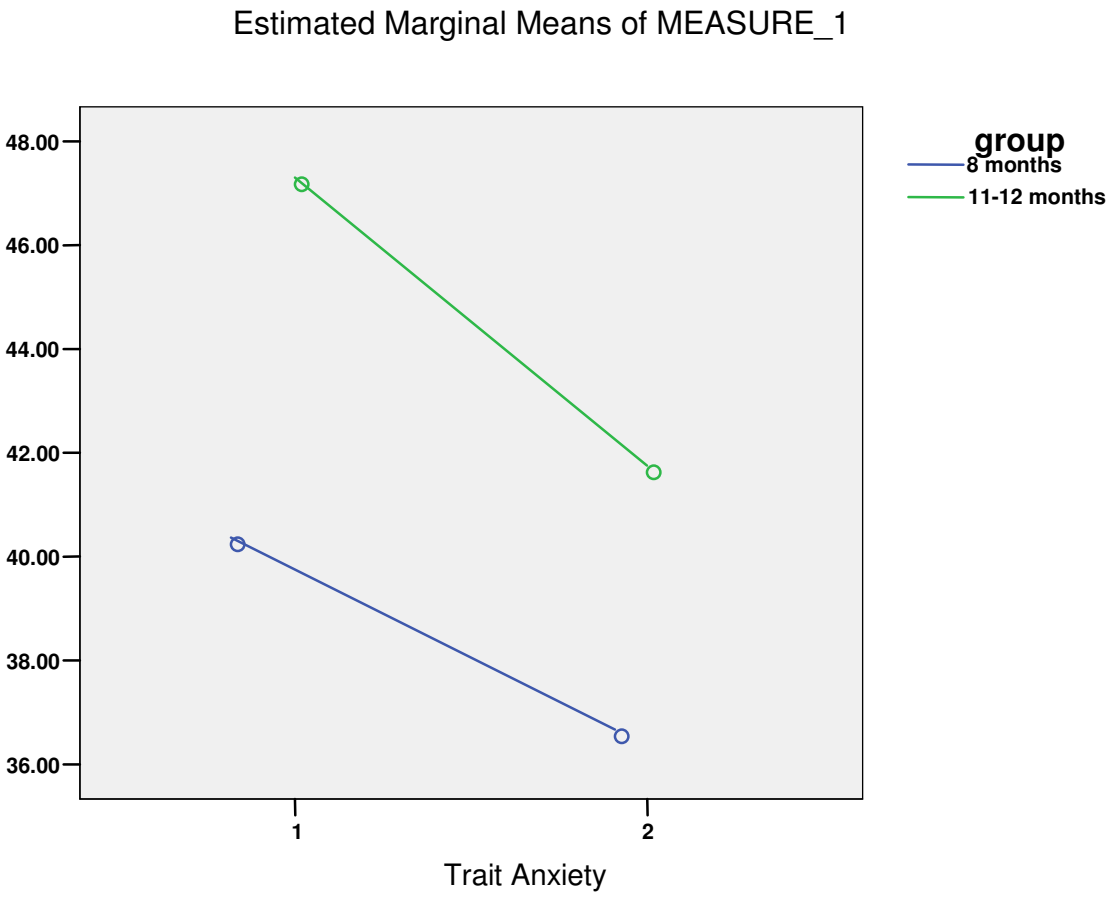
The STAI Y-2 yielded similar results. See Table 21 for the STAI Y-2 Mixed Analysis Of Variance and Figure 16 for the Plot Graph of same:

Table 21. Multiple Group Mixed Analysis of Variance: STAI Y-2.

Tests of Within-Subjects Effects STAY Y-2

Source		df	F	p
STAIY2	Sphericity Assumed	1	17.312	.000
STAIY2 * GRP	Sphericity Assumed	1	.279	.599

Figure 12. Multiple Group Mixed Analysis of Variance Plot Graph: STAI Y-2.



The difference in the pre-test score and the post-test score on the state anxiety measure, STAI Y-2 for the groups are significant, $p<.001$. The differences between the 8 month and the 11 month intervention on the STAI Y-2 are not significant.

We see the same pattern of results repeated for the Zung. See Table 22 for the Zung Mixed Analysis Of Variance and Figure 13 for the Plot Graph of same:

Table 22. Multiple Group Mixed Analysis of Variance: Zung.

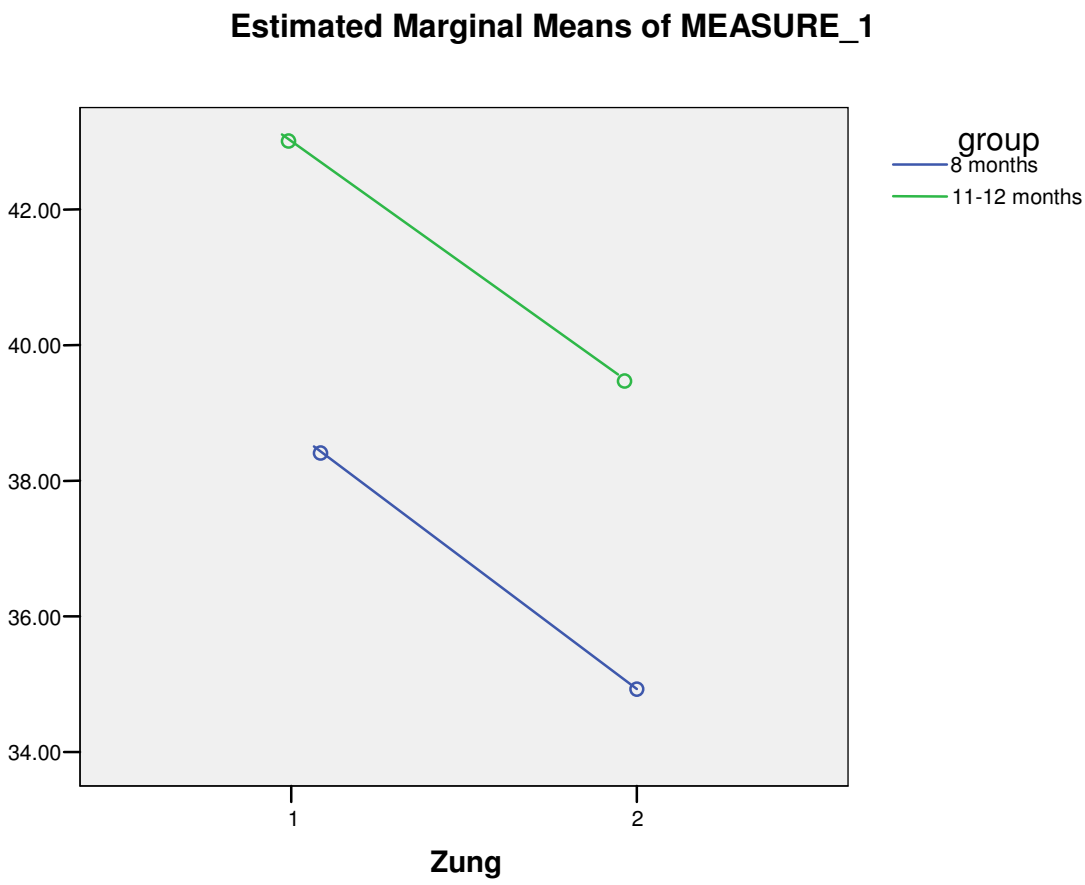
Tests of Within-Subjects Effects Zung

Source		df	F	p
Zung	Sphericity Assumed	1	10.920	.001
Zung * GRP	Sphericity Assumed	1	.481	.490

The difference in the pre-test score and the post-test score on the Zung depression measure,

are significant, p=<.001. differences between the groups, however, are not significant.

Figure 13. Multiple Group Mixed Analysis of Variance Plot Graph: Zung.



Although the differences between the 8 month and 11/12 month intervention groups are not significant, the pre and post-test differences for these groups are striking. At eight months of intervention, the decrease in state anxiety was significant, p=.01 (see table 20), while depression also decreased significantly, p=<.001. After at least eight months of intervention, anxiety and depression were significantly decreased in these two groups.

Summary of Results

The most significant findings of this study were the differences in the pre and post-test scores on the state anxiety (STAI Y-1), trait anxiety (STAI Y-2) and depression (Zung) scores. A marginally significant result occurred after three months of intervention between the groups, and could be argued that it in fact is significant for this new line of research. Table 28 below summarizes the results and their significance levels:

Table 23. Significant Results for all Groups.

	Between Groups	Tests within Subjects Pre to Post-test		
	STAI Y-1	STAI Y-1	STAI Y-2	Zung
Group A	.089	.001	.000	.009
Group B	NA	.001	.000	.003
8 Month Intervention	NA	.003	.000	.001
11 month Intervention	NA	.003	.000	.001

After three months, and continuing with eight to eleven and twelve months of intervention, all groups experienced a significant decrease in state and trait anxiety, as well as depression, when comparing the pre-test scores to the post test scores.

CHAPTER 4:
DISCUSSION

Benor defines Type I distant healing as the projection of healing solely through the efforts of the mind from the healer to the healee.[1] This research tested whether or not the efforts of the minds of experienced mediators who imprinted a healing intention onto an electronic device could have an impact on anxiety and depression in an adult population. The results achieved in this research support the results achieved in Tillers' other studies, all demonstrating that:

> ...the functioning existence of a device (Type 1) that acts as a "source" to (1) lift the EM gauge symmetry state (inner symmetry state) of a macroscopic space significantly above our normal U(1) level...and (2) tune or program that space to be highly responsive towards the fulfillment of the specific intention statement programmed into that Type 1 device from a deep meditative state by ...well-qualified meditators.[2]

Functioning at the vacuum level of physical reality, this new type of information carrier wave appears to be "modulatable by human intention...seemingly independent of distance and perhaps also of time".[3] This study demonstrates that an intention to decrease anxiety and depression broadcast from an IIED can impact human target subjects, decreasing depression to the point where the likelihood of the result occurring by chance is less than 1 in 100, and decreasing anxiety to the point where the likelihood of the result occurring by chance is less than 1 in 1000.

Other efforts to measure the impact of distant healing or healing intention have focused on healers intending healing intermittently over different periods of time, such as

once a day for a month.[4,5] In this study the intention was broadcast continually for one, three, or eight months. Some participants were in multiple groups, thereby receiving a total of eight, eleven or twelve months of broadcast intention. The most significant findings of this study were the differences between the pre- and post-test scores on the state anxiety (STAI Y-1), trait anxiety (STAI Y-2) and depression (Zung) scores for all intervention groups, whereas mean scores for the Group A control subjects did not change significantly between pre-test and post-test. For Group A (the three-month intervention), a marginally significant decrease, less than one chance in ten of occurring by chance, was found for the intervention subjects in comparison to the Group A controls. For Group B, the differences between the pre-test scores and the post-test scores were statistically significant, with decreases in state anxiety and depression occurring by chance less than 1 in 100, and decreases in trait anxiety occurring by chance less than 1 in 1000. This study suggests that broadcast intention from an IIED reduces anxiety and depression after at least three months when broadcast in a conditioned space.

The hypothesis was found to be true in this study, while the null hypothesis was not found to be true. The null hypothesis states, "The intention will have no significant effect on anxiety and depression when scrolled on a computer screen in a unconditioned space without an IIED". This speaks to the fact that there was no significant change from the pre-test to the post-test in the control groups in Group A. The results show that in fact there was no significant change in the control group whose names were scrolled on a computer without the intention and without broadcasting the intention from an IIED.

I believe that the results were achieved because the intention is a frequency of energy information that is inserted into what McTaggert (2002) calls "the field" (see

Chapter One). This information then causes a perturbation in the system of the individual, allowing for a re-organization of the system at a higher level, decreasing anxiety and depression. The control groups did not have the information inserted into the field, thus as a group their systems were not perturbed and they had no significant change from their baseline level of anxiety and depression. Previous studies have utilized intermittent insertion of information via healers sending healing intention with varying results. The consistency of the broadcast frequency is very likely the key factor that achieves the results obtained in this study.

The hypothesis states, "The intention will have a significant effect on anxiety and depression when broadcast in a conditioned space". This was true for Group A, where anxiety was marginally significantly decreased, and Group B over time, in which anxiety and depression were significantly decreased. Due to the design of the research, and the fact that one half of the Group B participants had already received 3 months of intention, group results between Group A and B were not in and of themselves found to be significant. However, when participants were evaluated prior to any intervention to post Group B intervention, there was found to be significant results.

This study brings us information about the efficacy of consistently broadcast intention, the time necessary for a change to take place, as well as addresses the question of whether or not distance between healing intention and the recipient is an impacting factor. In addition, we also gather information about the level of participation required of those who are receiving the healing intention.

In every research study there is the possibility of "experimenter effect", whereby the intention of the experimenter for a certain outcome, positive or negative, influences

the results enough to skew them in one direction or another.[6] In the present case, the principal investigator had personally hoped for a positive outcome, but did not specifically meditate on the outcome, pray for the outcome, nor consciously intend that the outcome be one way or another. Early in the study, the investigator became aware of a premise put forth by David Eichler that "every thought is a prayer" (Personal communication, April 22, 2003), and so attempted to keep thoughts about the outcome to a minimum. The study design facilitated this because during the intervention period, the principal investigator was not directly involved with the groups, the interventions, or the study itself. Although the impact that the investigator's thoughts may have had on the study outcomes cannot be totally discounted, it is believed to have been minimal. Others involved with this study may have also hoped for a positive outcome, however, the impact of their thoughts cannot be assessed.

Subject Selection and Retention

Overall, subject recruitment from the general population for this type of study is difficult. The concepts are novel and primarily known to the general population through media portrayals from the realm of science fiction. The populations solicited were assumed to have some familiarity with holistic health concepts; however, the response and retention rate was particularly low for Group A at 18%. (See Table 7 for Subject Participation Rates.) It helped tremendously to have introductory letters from practitioners to their patients. However, recruitment for the study was highest when the principal investigator made a brief presentation and was somewhat known to the people being offered the opportunity to participate. Another factor that may have facilitated the high drop out rate is that the principal investigator had only written contact with subjects

about the study, and the subjects were not required to do anything themselves except fill out the pre and post-tests. The personal investment in the study was minimal, so subjects may have not been invested enough to complete all phases of the study.

The fact that the study instruments chosen to measure change asked questions that were sensitive in nature may have discouraged some participants from participating. Initially, the principal investigator asked for basic demographic information, including birth date, education level, occupation, and whether or not the person participates in a faith-based practice. Fewer than 40% of the participants completed that information, which may speak to the cautious nature of the population and concerns about privacy. The public is far more educated about privacy practices with the advent of HIPAA and issues in the national news such as identity theft and credit card fraud. Although the principal investigator outlined in writing what would happen to the information collected from participants, the fact that 1) the study is somewhat unusual (broadcast intention impacting someone's life), that 2) the principal investigator was not known to the majority of participants, and that 3) there was little communication during the study may have all impacted participants' willingness to share basic information.

Discussion of Groups

Each of the study samples had its own special issues in terms of design as well as results. These will be discussed by group. The decrease in the Zung difference at 11 months is difficult to speculate about however, could be due to variables germane only to this group, or could be that the results diminish over time. More research is needed to discover the mechanisms for action with this type of a result. We also don't know if this

difference pre to post is clinically significant, as there is no research that identifies small changes in these tests correlated with changes in symptomotology

Group A

Group A had a high attrition rate between the pre-test and the post-test, losing almost 1/3 of the participants. A 2X2 Mixed ANOVA was performed on all three measures. Although the intervention sample's means were significantly different between the pre- and post-test on all three measures in the desired direction, only one of the between groups ANOVAs demonstrated a sgnificant result. The interaction of group (control v. intervention) by time (pre-test/post-test) on the STAI Y-1 measure was the only finding approaching significance (p=<.10). However, some researchers have argued that a significance level of .10 is appropriate when exploring a new line of research, so by that standard, there is a marginally significant result on the Group A STAI Y-1 ANOVA. In other words, though the intervention and control subjects were not significantly different at the pre-test, the intervention group showed a marginally significant reduction in their STAI Y-1 scores, while the control group's reduction was not significant. That is fairly compelling for such a small sample size.

Group A also had the unplanned design feature of one of the study monitors daily playing music and reading the names of the subjects with the phrase "be well" after each name. It is not known if this improved the results, boosting the power of the intention, so to speak, or if it was detrimental to the intentions that were being broadcast by the IIED. It could be speculated that the phrase "be well" is in concert with the intention, and may have had an additive effect. The unknowns regarding the impact of human consciousness make it difficult to say anything about the result except more research is needed. This

study was specifically designed to eliminate the human component in broadcasting intention, due to the multiple variables involved in assessing the efficacies of individuals' previous research studies. It is interesting to note that three participants resigned from the study during that period of time, citing the study monitor's involvement as the reason for ending participation. The unplanned designed change renders problematic any speculation on the meaning or interpretation of the impact of the IIED on Group A. Further study is warranted to determine the impact on health issues of intention from human consciousness combined with an IIED over a longer period of time.

Group B

As a result of events surrounding Group A, it was decided that a longer trial period with participants from Group A would be attempted. At the time, it seemed reasonable to use the Group A post-test as the pre-test for Group B. However, a true non-intervention pre-test could not be achieved due to the fact that half of the participants had just received three months of intervention, and that the Group A Controls now needed to receive their three months of intervention per the research design. The lack of significance between the groups at the p=>.1 level, comparing Group A and Group B data is not surprising, and is more accurately a measure of mid-intervention to post-test, rather than a true pre-test to post-test measure (see Tables 16-18 and Figures 8-10). We must also consider that Group A and Group B are not comparable interventions, because Group A (and that portion of Group B that included completers of the Group A intervention) received an unplanned "enhanced" condition (device + human intention) during their initial three-month trial. And in fact, the results indicate that the decreases in anxiety and depression were not significantly different for those receiving 3 months of

intervention in Group A and those participating in Group B who received an additional 8 (Group A control group) or 11 (Group A intervention group) months of intervention. The best indicator of change over time is in measuring from the first pre-test prior to any intervention in comparison to the last post-test after all intervention is complete.

Group A and B Over Time

Subjects who completed both the pre- and post-test for one group were offered the opportunity to participate in the next group. This resulted in 49 participants having a combined total intervention time of 11 months resulting from 3 months of intervention in the Group A intervention group and 8 months of intervention in Group B. There were seven participants who received the intervention in the Pilot Group, Group A, and Group B, resulting in a total combined intervention time of 12 months.

In looking at a true pre-test (no intervention) to post-test (all intervention complete), we see an aggregate significant effect. One can speculate that the demand for change caused by the broadcast IIED actually increased anxiety in the first month of broadcasting the intention (see Pilot Project in Appendix Q). However, by the end of three months, there is a significant movement in the other direction, towards decreased anxiety, and by eight months, the decrease in anxiety is statistically significant. Trait anxiety and depression did not appear to increase, which is logical. When either positive or negative changes occur, stress is the result. According to Han Selye, the pioneer stress researcher, stress is the nonspecific response of the body to any demand.[7] When change is occurring, that creates an immediate stress, which translates into a short-term anxiety. One would not expect trait anxiety ("I am anxious in general"), or depression, to be affected by short-term changes. Continuing stress over longer periods of time could

negatively affect both trait anxiety and depression; however, stress levels were not measured in this study. The results suggest that the IIED broadcast decreased anxiety and depression in spite of whatever stressors were happening in participants' lives. If this is true, there are many implications for stress management and stress related illness and thus more research is needed to assess the potential impact of the IIED on decreasing stress, anxiety and depression.

Efficacy of Intention

In previous healing research (see Chapter One), variation in healer efficacy in broadcasting the intention, and the time necessary to effect a change have been explored, with various results and little replication of findings. While it would be impossible for a healer to broadcast a healing intention 24 hours a day, seven days a week, for a period of months, it is not difficult for an electronic device to consistently broadcast an intention over a period of months. This research automates the broadcasting of human intention, if you will, by imprinting a human transmitted intention on the electronic device. The device then transmits the same intention in the same frequency with a consistency that would be impossible for humans to sustain over time. The data suggests that a meaningful change took place with respect to anxiety and depression, and more research is needed to assess the impact on specific diagnosed illnesses, improving the quality of life and decreasing burden of healthcare costs on our struggling economy.

Research on intention has been criticized because, unlike a medication, a "dose" of intention has been difficult to quantify in the past. For the first time with humans, the "dose" of intention can be quantified as a broadcast frequency over a certain period of time. We do not know enough about the mechanism of transmission of the intention to

understand if the transmission begins with the thought of the researcher before the IIED is imprinted and broadcasting, or if intention continues to be transmitted after the IIED transmission ceases. It would also appear that proximity to the IIED may not matter, since in this study, subjects were at least from 375 miles or more from the IIED. This finding validates other research that shows that intention or healing is non local, and does travel over distances.[8] More research is needed into the mechanism of action, and in particular, the impact of conditioned space on facilitating the transmission.

This research gives us more information regarding the efficacy of the broadcast of intention. Unlike studies using people to broadcast a thought intention or prayer, Group B in this study received only the intention imprinted on the device, thus eliminating whatever other factors may be influencing the sender's efficacy (or potency). The device broadcasts at the same frequency continually. This provides a level of consistency previously not available in healer broadcast intention research. While other research with intention has achieved varying results (see Chapter One), this research demonstrates that consistently broadcast intention from an IIED reduces anxiety and depression significantly after three months. Previous research has used a variety of types of people to send intention, from specifically trained healer to church prayer groups. The variance in the people sending the intention makes it difficult to generalize the results of any group of studies, except to say that more research is needed.[9]

Although the intentions were slightly different for each group, all had the contained the intention of "reducing all unnecessary stress precursors in the individual's life so that they might manifest optimal health and functioning at physical, emotional and mental levels in their daily life, consistent with their soul's primary purpose for this

particular life experience" (see Appendix A, B and C). The variance in the intentions for each group was therefore not a factor in this study.

This research raises many questions about how intention, or energy, can travel over distances, to a specific person, residing at a specific location, and make an impact that is in concert spiritually with that person. William Tiller's model of intention (see Chapter One) explains the mechanism as one that primarily utilizes a frequency of thought that is broadcast similar to the way a radio frequency is broadcast. The names and addresses of the people who participated in the study may have acted as a locator for the frequency which carried the intention. The participants don't consciously have to do anything, as the frequency impacts their energy field just like any other frequency (radio, microwave, cell phone) in their environment. When the frequency impacts their energy field over a period of time, and the intention is in harmony with their soul's purpose in this life, the intention carried in the frequency shifts the energy field toward decreases in anxiety and depression. These shifts in the energy field then manifest as decreased state, trait anxiety and decreased depression. C. Norman Shealy believes that depression and anxiety are precursors in 85% or more of people who are ill (Personal communication, October 9, 2004), and speculates that reducing anxiety and depression could also reduce illness. Longitudinal studies are needed to fully assess the potential impact on health.

Impact of Intention over Time

This research showed that after one month of broadcast intention, state anxiety was significantly increased, while after three months it was decreased, and after eight months, anxiety and depression reductions were statistically significant. This process is one that has been well described in physics. The second law of thermodynamics

describes a process of disorganization over time, so that in general things become less structured and they decay.[10] Prigogine and Stengers believe that to make a transition to a higher order, a system must be perturbed. They have shown that if energy is introduced to matter, the normal disintegration process of the second law of thermodynamics is altered, and matter takes on a higher organization.[11] In this study, the intention was introduced into the energy field of a person, causing perturbation which may have manifested as increased anxiety after one month. However, after three months, and most certainly by eight months and beyond, the systems seem to reorganize to a higher order of functioning, manifesting possibly as less anxiety and depression.

This study provides us with information about change in the energy field, and the time frame for achieving an impact with broadcast intention from an IIED. In previous studies on distant healing and intention, the period of time that the healing intention was sent (5 minutes, 30 minutes, etc.) and the interval of sending the intention (daily, weekly, etc) varied so that we are unable to discern from other current research a standard time or interval required to have a positive impact. This study demonstrated that an IIED broadcast intention can have an impact on decreasing anxiety and depression after 3-8 months of broadcast intention.

Although it is clear from Tiller's previous experiments[12] that the space in which the IIED is broadcasting becomes conditioned, it is not clear if the target subjects' locations, which were at varying distances from the IIED, become conditioned as well. This is an area for further research, as such conditioning could be used in physician offices, clinics and hospitals, broadcasting out to patients' individual homes, increasing order and coherence in the communication between the individual's own spirit and this

physical reality, as well as increasing communication between individuals on an energetic level. In addition, benefit could be gained from the physician or treatment teams' intention for the patient and their beliefs that the treatment will be effective.

The intentions utilized in this study varied slightly, becoming more specific with each group, from the Pilot Project's "elevate the gauge symmetry and reduce all stress precursors" to Group A's "elevate the gauge symmetry of the Sonrisa office and reduce all stress precursors" to Group B's "Decrease depression and reduce all stress precursors", this is not believed to be a factor in the results. More research is needs to be conducted to discover ways in which differences in languaging the intention may impact the outcome.

It is interesting that after one month the state anxiety for the Pilot Project increased, and after three months Group A was almost statistically significantly better as compared to the control group, and after eight months the differences between the pre-tests and post-tests indicated that the scores were statistically significantly decreased. The confounding factors of music and human consciousness utilized in Group A cannot be discounted, but further research is needed to discover the role of music and human consciousness utilized with IIEDs to improve health.

One aspect of Tiller's Model that was not evaluated was the degree to which the intention was in concert with each individual's own spirit. In the model, Tiller postulates that intention that is not in harmony with the person's soul or spirit cannot impact the person's physical reality. Each of the intentions contained the phrase "reduce unnecessary stress precursors". This study did not evaluate those stress precursors that may or may not be in concert with the soul's purpose for this lifetime, and that may have had an

impact on the robustness of the results. It is unknown at this time if the intentions utilized were in harmony or not with the subjects' spirits; however, the significance of the results would suggest that for at least some of them, they were. We could postulate that total health is in concert with everyone's spirits; however, this would be only an assumption. There is no known way currently to measure this with any reliability, though at some point in the future this variable will need to be considered.

Implications for Health Improvement

The goal of the intention used in this study is to increase the order and coherence of the person's own energy field so that reduced anxiety and depression will facilitate the manifestation of the level of health and wholeness in concert with the soul's purpose. This study's results have some interesting implications for health improvement in medicine, which need to be replicated and confirmed. This beginning study gives us some basic information to understand that after 3-8 months of IIED broadcast intervention, a reduction in anxiety and depression occurs. Now we are ready to further define the nature of the impact, other variables that may play a role (such as music, stress levels, or human consciousness) and find out more precisely how intention works so that we can facilitate improved health for a variety of conditions and illnesses, as well as to decrease the antecedents to the development of illness. Future research could explore the impact of intention on diagnosed illness in individuals, decreasing stress in the workplace, or a multitude of health issues to explore the impact on decreasing illness, improving health, and decreasing the cost of our current medical treatment system and its burden on our economy.

Summary

This study provides hope that we can impact our health positively through intention, and gives us direction for future research efforts. In the words of Targ and Thompson (1997):

> ...if in fact [mental] intentions can be shown to facilitate healing at a distance, this would clearly imply that human beings are more connected to each other and more responsible to each other than previously believed. That connection could be actuated through the agency of God, consciousness, love, electrons or a combination. The answers to such questions await further research.

These findings are likely to be controversial. The study of intention and healing in medicine has been challenged with zeal by mainstream medicine, and even within the leadership of the professional energy medicine organizations, the design of this study has been highly criticized for not utilizing humans to transmit the intention. However, our healthcare system and the health of our citizens is in jeopardy now, and the variances in outcome as well as the logistics of utilizing individual healers with individual patients make large scale changes in our health status a very long term proposition. We do not have the luxury of time needed to affect change that way, and though the value of individuals working together for health improvement must be honored, it is obvious that research in that area should continue. The health of our citizens is in crisis now and we need radical solutions quickly if we are going to survive as a species.

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APPENDIX A: Pilot Project Intention Statement

To activate the consciousness of the system so as to create that required infrastructure which elevates the electromagnetic gauge symmetry state of the particular listed individual's home environment in the best possible way for that particular individual's soul purpose in this lifetime. This elevated EM gauge symmetry state is for the purpose of reducing all unnecessary stress precursors in the individual's life so that they might manifest optimal health and functioning at physical, emotional and mental levels in their daily life, consistent with their soul's primary purpose for this particular life experience. Individuals currently being treated for particular body system malfunctions will obtain treatment from various health care practitioners that become robustly efficacious in restoring them to optimal health status consistent with their soul's purpose.

APPENDIX B: Group A Intention Statement

To activate the indwelling consciousness of the Nunley Sonrisa Office for the specific purpose of projecting/stimulating healing to specific individuals located at various identified remote site locations. The primary purpose of this stimulation is to reduce all unnecessary stress precursors in the individual's life so that they might manifest optimal health and daily functioning at physical, emotional and mental levels, consistent with their soul's purpose for this particular lifetime experience.

APPENDIX C:
Group A Intention Statement

To activate the indwelling consciousness of Norm Shealy's designated HOLOS laboratory space in Missouri in order to significantly raise the EM gauge symmetry state of that space. The special characteristic of this state is for the specific purpose of broadcasting, via specific intention-modulated magnetoelectric (ME) radiation, to specifically identified individuals located at various identified remote site locations that are continuously scrolled through, and displayed on the screen of, a computer located in the "conditioned" space. The primary intention-information of this broadcast is (a) to significantly reduce the periodicity, magnitude and duration of depression episodes that have heretofore occurred in the lives of these identified individuals and (b) to reduce all unnecessary stress precursors in the individual's life so that they might manifest optimal health and functioning at physical, emotional and mental levels in their daily life, consistent with their soul's primary purpose for this particular life experience.

APPENDIX D:
The State-Trait Anxiety Inventory for Adults

mind garden

SELF-EVALUATION QUESTIONNAIRE STAI Form Y-1

Please provide the following information:

Date_____ _____

DIRECTIONS:

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel *right* now, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm	1	2	3	4
2. I feel secure	1	2	3	4
3. I am tense	1	2	3	4
4. I feel strained	1	2	3	4
5. I feel at ease	1	2	3	4
6. I feel upset	1	2	3	4
7. I am presently worrying over possible misfortunes	1	2	3	4
8. I feel satisfied	1	2	3	4
9. I feel frightened	1	2	3	4
10. I feel comfortable	1	2	3	4
11. I feel self-confident	1	2	3	4
12. I feel nervous	1	2	3	4
13. I am jittery	1	2	3	4
14. I feel indecisive	1	2	3	4
15. I am relaxed	1	2	3	4
16. I feel content	1	2	3	4
17. I am worried	1	2	3	4
18. I feel confused	1	2	3	4
19. I feel steady	1	2	3	4
20. I feel pleasant	1	2	3	4

STAIP-AD Test Form Y
www.mindgarden.com

SELF-EVALUATION QUESTIONNAIRE

STAI Form Y-2

Date_____

DIRECTIONS

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
21. I feel pleasant	1	2	3	4
22. I feel nervous and restless	1	2	3	4
23. I feel satisfied with myself	1	2	3	4
24. I wish I could be as happy as others seem to be	1	2	3	4
25. I feel like a failure	1	2	3	4
26. I feel rested	1	2	3	4
27. I am "calm, cool, and collected"	1	2	3	4
28. I feel that difficulties are piling up so that I cannot overcome them	1	2	3	4
29. I worry too much over something that really doesn't matter	1	2	3	4
30. I am happy	1	2	3	4
31. I have disturbing thoughts	1	2	3	4
32. I lack self-confidence	1	2	3	4
33. I feel secure	1	2	3	4
34. I make decisions easily	1	2	3	4
35. I feel inadequate	1	2	3	4
36. I am content	1	2	3	4
37. Some unimportant thought runs through my mind and bothers me	1	2	3	4
38. I take disappointments so keenly that I can't put them out of my mind	1	2	3	4
39. I am a steady person	1	2	3	4
40. I get in a state of tension or turmoil as I think over my recent concerns and interests	1	2	3	4

STAIP-AD Test Form Y
www.mindgarden.com

APPENDIX E:
The Zung Self Rating Depression Scale

ZUNG SELF-RATING DEPRESSION SCALE

Date of Assessment _____

Please read each statement and decide how much of the time the statement describes how you have been feeling during the past several days.

Make check mark (✓) in appropriate column.	A little of the time	Some of the time	Good part of the time	Most of the time
1. I feel down-hearted and blue				
2. Morning is when I feel the best				
3. I have crying spells or feel like it				
4. I have trouble sleeping at night				
5. I eat as much as I used to				
6. I still enjoy sex				
7. I notice that I am losing weight				
8. I have trouble with constipation				
9. My heart beats faster than usual				
10. I get tired for no reason				
11. My mind is as clear as it used to be				
12. I find it easy to do the things I used to				
13. I am restless and can't keep still				
14. I feel hopeful about the future				
15. I am more irritable than usual				
16. I find it easy to make decisions				
17. I feel that I am useful and needed				
18. My life is pretty full				
19. I feel that others would be better off if I were dead				
20. I still enjoy the things I used to do				

Adapted from Zung, A self-rating depression scale, *Arch Gen Psychiatry*, 1965;12:63-70.

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APPENDIX F:
HIPAA Transition Rules

§ 164.532 Transition provisions.

(4) Standard: effect of prior consents and authorizations. Notwithstanding other sections of this subpart, a covered entity may continue to use or disclose protected health information pursuant to a consent, authorization, or other express legal permission obtained from an individual permitting the use or disclosure of protected health information that does not comply with §§ 164.506 or 164.508 of this subpart consistent with paragraph (b) of this section.

(b) Implementation specification: requirements for retaining effectiveness of prior consents and authorizations. Notwithstanding other sections of this subpart, the following provisions apply to use or disclosure by a covered entity of protected health information pursuant to a consent, authorization, or other express legal permission obtained from an individual permitting the use or disclosure of protected health information, if the consent, authorization, or other express legal permission was obtained from an individual before the applicable compliance date of this subpart and does not comply with §§ 164.506 or 164.508 of this subpart.

(4) If the consent, authorization, or other express legal permission obtained from an individual permits a use or disclosure for purposes of carrying out treatment, payment, or health care operations, the covered entity may, with respect to protected health information that it created or received before the applicable compliance date of this subpart and to which the consent, authorization, or other express legal permission obtained from an individual applies, use or disclose such information for purposes of carrying out treatment, payment, or health care operations, provided that:

(4) The covered entity does may not make any use or disclosure that is expressly excluded from the a consent, authorization, or other express legal permission obtained from an individual; and

(ii) The covered entity complies with all limitations placed by the consent, authorization, or other express legal permission obtained from an individual.

(2) If the consent, authorization, or other express legal permission obtained from an individual specifically permits a use or disclosure for a purpose other than to carry out treatment, payment, or health care operations, the covered entity may, with respect to protected health information that it created or received before the applicable compliance date of this subpart and to which the consent, authorization, or other express legal permission obtained from an individual applies, make such use or disclosure, provided that:

(4) The covered entity does not make any use or disclosure that is expressly excluded from the consent, authorization, or other express legal permission obtained from an individual; and

(ii) The covered entity complies with all limitations placed by the consent, authorization, or other express legal permission obtained from an individual.

(3) In the case of a consent, authorization, or other express legal permission obtained from an individual that identifies a specific research project that includes treatment of individuals:

(4) If the consent, authorization, or other express legal permission obtained from an individual specifically permits a use or disclosure for purposes of the project, the covered entity may, with respect to protected health information that it created or received either before or after the applicable compliance date of this subpart and to which the consent or authorization applies, make such use or disclosure for purposes of that project, provided that the covered entity complies with all limitations placed by the consent, authorization, or other express legal permission obtained from an individual.

(ii) If the consent, authorization, or other express legal permission obtained from an individual is a general consent to participate in the project, and a covered entity is conducting or participating in the research, such covered entity may, with respect to protected health information that it created or received as part of the project before or after the applicable compliance date of this subpart, make a use or disclosure for purposes of that project, provided that the covered entity complies with all limitations placed by the consent, authorization, or other express legal permission obtained from an individual.

(4) If, after the applicable compliance date of this subpart, a covered entity agrees to a restriction requested by an individual under § 164.522(a), a subsequent use or disclosure of protected health information that is subject to the restriction based on a consent, authorization, or other express legal permission obtained from an individual as given effect by paragraph (b) of this section, must comply with such restriction.

APPENDIX G:
Application for Waiver of HIPAA Requirements

The federal privacy regulations for human subject's research in the Health Insurance Portability and Accountability Act of 1996 (HIPAA) are specifically designed to regulate the use and disclosure of subjects Protected Health Information (PHI). Protected Health Information is defined as

- The definition of protected information

All uses and disclosures of PHI for research must have authorization or .a statement that the IRB has determined that the alteration or waiver, in whole or in part, of authorization satisfies the following criteria:

(A) The use or disclosure of protected health information involves no more than minimal risk to the individuals;

The disclosure of the pre and post-test data in this study poses minimal risk to individuals, as the information will be identified in aggregate only. The information to be used for research purposes is will be collected by individual identified by a unique identifier (participant number) and only the researcher will know which person is linked to which number.

(B) The alteration or waiver will not adversely affect the privacy rights and the welfare of the individuals;

The privacy rights of individuals nor their welfare will be affected by participation in the study, as individual data are not identified. In general, individuals possibly could be linked with the study if the individuals themselves disclose that fact. The possibility exists that someone may know of the study and the individual and thus link an individual to the study, but individual study participation will only be known to the principal researcher. .

(C) The research could not practicably be conducted without the alteration or waiver;

Due to the numbers of potential participants and their locations across the United States, it is not practical to conduct face to face meetings to explain and obtain informed consent.

(D) The research could not practicably be conducted without access to and use of the protected health information;

The results of this study will be reported utilizing aggregate pre and post-test information that will be analyzed for differences. This aggregate information will be comprised of individual test scores indicating pre and post-test differences and thus is vital to the study.

(E) The privacy risks to individuals whose protected health information is to be used or disclosed are reasonable in relation to the anticipated benefits if any to the individuals, and the importance of the knowledge that may reasonably be expected to result from the research;

The privacy risks to individuals who participate in this study are minimal due to the aggregate reporting and the fact that their individual test information will not leave the locked file cabinet in the researchers home for a period of 1 year and then be destroyed. The anticipated benefits of potential improved health of the volunteers, the knowledge gained by this study in terms of advancing the science of energy medicine and our understanding of how intention may impact health justify the risk that an individual may be associated with the study due to their own disclosure of that fact.

(F) There is an adequate plan to protect the identifiers from improper use and disclosure;

The names and addresses of individuals who participate in the study will be on a password protected disk accessible only by the principle researcher. Two Gateway 233's specifically programmed for this study to continuously scroll names and addresses will be utilized. The names and addresses will be in a program that is run under macro commands that would boot up automatically. One of the study monitors, Dr. Robert Nunley, would have access to is the computer itself, up to the operating system level to make sure that it gets restarted after a prolonged power outage. A green light would be displayed on the screen when the list that is being cycled through is running as it should, and a red light when it is not. To get further information would require a password that only the researcher would have. Dr. Nunley will monitor the computer daily and, when the red light is on, reboot the system repeatedly until the green light comes on and stays on. Only the research assistant would have access to the individual names on the list. All data will be reported in aggregate and thus the possibility of improper use or individual disclosure is negligible.

(G) There is an adequate plan to destroy the identifiers at the earliest opportunity consistent with conduct of the research, unless there is a health or research justification for retaining the identifiers, or such retention is otherwise required by law; and

There is no retention required by law. As a precautionary measure, the pre and post-test data will be retained for a year and then destroyed.

(H) There are adequate written assurances that the protected health information will not be reused or disclosed to any other person or entity, except as required by law, for authorized oversight of the research project, or for other research for which the use or disclosure of protected health information would be permitted by this subpart.

The information to be collected and reported in aggregate will not be disclosed to any other person or entity except as required by law.

(I) Protected health information needed. A brief description of the protected health information for which use or access has been determined to be necessary by the IRB.

There is no use or access required by the IRB to the protected health information to be used in this study.

APPENDIX H:
HIPAA Waiver Requirements

Sections 164.506, 164.508, 164.510 and 164.512 relating to uses and disclosures for which consent, an authorization, or opportunity to agree or object is not required.

§ 164.506 Consent for uses or disclosures to carry out treatment, payment, or health care operations.

(a) Standard: consent requirement.

(1) Except as provided in paragraph (a)(2) or (a)(3) of this section, a covered health care provider must obtain the individual's consent, in accordance with this section, prior to using or disclosing protected health information to carry out treatment, payment, or health care operations.

(2) A covered health care provider may, without consent, use or disclose protected health information to carry out treatment, payment, or health care operations, if:

(i) The covered health care provider has an indirect treatment relationship with the individual; or

(ii) The covered health care provider created or received the protected health information in the course of providing health care to an individual who is an inmate.

(3)(i) A covered health care provider may, without prior consent, use or disclose protected health information created or received under paragraph (a)(3)(i)(A)-(C) of this section to carry out treatment, payment, or health care operations:

(A) In emergency treatment situations, if the covered health care provider attempts to obtain such consent as soon as reasonably practicable after the delivery of such treatment;

(B) If the covered health care provider is required by law to treat the individual, and the covered health care provider attempts to obtain such consent but is unable to obtain such consent; or

(C) If a covered health care provider attempts to obtain such consent from the individual but is unable to obtain such consent due to substantial barriers to communicating with the individual, and the covered health care provider determines, in the exercise of professional judgment, that the individual's consent to receive treatment is clearly inferred from the circumstances.

(ii) A covered health care provider that fails to obtain such consent in accordance with paragraph (a)(3)(i) of this section must document its attempt to obtain consent and the reason why consent was not obtained.

(4) If a covered entity is not required to obtain consent by paragraph (a)(1) of this section, it may obtain an individual's consent for the covered entity's own use or disclosure of protected health information to carry out treatment, payment, or

health care operations, provided that such consent meets the requirements of this section.

(5) Except as provided in paragraph (f)(1) of this section, a consent obtained by a covered entity under this section is not effective to permit another covered entity to use or disclose protected health information.

(b) Implementation specifications: general requirements.

(1) A covered health care provider may condition treatment on the provision by the individual of a consent under this section.

(2) A health plan may condition enrollment in the health plan on the provision by the individual of a consent under this section sought in conjunction with such enrollment.

(3) A consent under this section may not be combined in a single document with the notice required by § 164.520.

(4)(i) A consent for use or disclosure may be combined with other types of written legal permission from the individual (e.g., an informed consent for treatment or a consent to assignment of benefits), if the consent under this section:

(A) Is visually and organizationally separate from such other written legal permission; and

(B) Is separately signed by the individual and dated.

(ii) A consent for use or disclosure may be combined with a research authorization under § 164.508(f).

(5) An individual may revoke a consent under this section at any time, except to the extent that the covered entity has taken action in reliance thereon. Such revocation must be in writing.

(6) A covered entity must document and retain any signed consent under this section as required by § 164.530(j).

(c) Implementation specifications: content requirements. A consent under this section must be in plain language and:

(1) Inform the individual that protected health information may be used and disclosed to carry out treatment, payment, or health care operations;

(2) Refer the individual to the notice required by § 164.520 for a more complete description of such uses and disclosures and state that the individual has the right to review the notice prior to signing the consent;

(3) If the covered entity has reserved the right to change its privacy practices that are described in the notice in accordance with § 164.520(b)(1)(v)(C), state that the terms of its notice may change and describe how the individual may obtain a revised notice;

(4) State that:

(i) The individual has the right to request that the covered entity restrict how protected health information is used or disclosed to carry out treatment, payment, or health care operations;

(ii) The covered entity is not required to agree to requested restrictions; and

(iii) If the covered entity agrees to a requested restriction, the restriction is binding on the covered entity;

(5) State that the individual has the right to revoke the consent in writing, except to the extent that the covered entity has taken action in reliance thereon; and

(6) Be signed by the individual and dated.

(d) Implementation specifications: defective consents. There is no consent under this section, if the document submitted has any of the following defects:

(1) The consent lacks an element required by paragraph (c) of this section, as applicable; or

(2) The consent has been revoked in accordance with paragraph (b)(5) of this section.

(e) Standard: resolving conflicting consents and authorizations.

(1) If a covered entity has obtained a consent under this section and receives any other authorization or written legal permission from the individual for a disclosure of protected health information to carry out treatment, payment, or health care operations, the covered entity may disclose such protected health information only in accordance with the more restrictive consent, authorization, or other written legal permission from the individual.

(2) A covered entity may attempt to resolve a conflict between a consent and an authorization or other written legal permission from the individual described in paragraph (e)(1) of this section by:

(i) Obtaining a new consent from the individual under this section for the disclosure to carry out treatment, payment, or health care operations; or

(ii) Communicating orally or in writing with the individual in order to determine the individual's preference in resolving the conflict. The covered entity must document the individual's preference and may only disclose protected health information in accordance with the individual's preference.

(f)(1) Standard: joint consents. Covered entities that participate in an organized health care arrangement and that have a joint notice under § 164.520(d) may comply with this section by a joint consent.

(2) Implementation specifications: requirements for joint consents.

(i) A joint consent must:

(A) Include the name or other specific identification of the covered entities, or classes of covered entities, to which the joint consent applies; and

(B) Meet the requirements of this section, except that the statements required by this section may be altered to reflect the fact that the consent covers more than one covered entity.

(ii) If an individual revokes a joint consent, the covered entity that receives the revocation must inform the other entities covered by the joint consent of the revocation as soon as practicable.

§164.508 Uses and disclosures for which an authorization is required.

(a) Standard: authorizations for uses and disclosures.

(1) Authorization required: general rule. Except as otherwise permitted or required by this subchapter, a covered entity may not use or disclose protected health information without an authorization that is valid under this section. When a covered entity obtains or receives a valid authorization for its use or disclosure of protected health information, such use or disclosure must be consistent with such authorization.

(2) Authorization required: psychotherapy notes. Notwithstanding any other provision of this subpart, other than transition provisions provided for in § 164.532, a covered entity must obtain an authorization for any use or disclosure of psychotherapy notes, except:

(i) To carry out the following treatment, payment, or health care operations, consistent with consent requirements in § 164.506:

(A) Use by originator of the psychotherapy notes for treatment;

(B) Use or disclosure by the covered entity in training programs in which students, trainees, or practitioners in mental health learn under supervision to practice or improve their skills in group, joint, family, or individual counseling; or

(C) Use or disclosure by the covered entity to defend a legal action or other proceeding brought by the individual; and

(ii) A use or disclosure that is required by § 164.502(a)(2)(ii) or permitted by § 164.512(a); § 164.512(d) with respect to the oversight of the originator of the psychotherapy notes; § 164.512(g)(1); or § 164.512(j)(1)(i).

(b) Implementation specifications: general requirements.

1) Valid authorizations.

(i) A valid authorization is a document that contains the elements listed in paragraph (c) and, as applicable, paragraph (d), (e), or (f) of this section.

(ii) A valid authorization may contain elements or information in addition to the elements required by this section, provided that such additional elements or information are not be inconsistent with the elements required by this section.

(2) Defective authorizations. An authorization is not valid, if the document submitted has any of the following defects:

(i) The expiration date has passed or the expiration event is known by the covered entity to have occurred;

(ii) The authorization has not been filled out completely, with respect to an element described by paragraph (c), (d), (e), or (f) of this section, if applicable;

(iii) The authorization is known by the covered entity to have been revoked;

(iv) The authorization lacks an element required by paragraph (c), (d), (e), or (f) of this section, if applicable;

(v) The authorization violates paragraph (b)(3) of this section, if applicable;

(vi) Any material information in the authorization is known by the covered entity to be false.

(3) Compound authorizations. An authorization for use or disclosure of protected health information may not be combined with any other document to create a compound authorization, except as follows:

(i) An authorization for the use or disclosure of protected health information created for research that includes treatment of the individual may be combined as permitted by § 164.506(b)(4)(ii) or paragraph (f) of this section;

(ii) An authorization for a use or disclosure of psychotherapy notes may only be combined with another authorization for a use or disclosure of psychotherapy notes;

(iii) An authorization under this section, other than an authorization for a use or disclosure of psychotherapy notes may be combined with any other such authorization under this section, except when a covered entity has conditioned the provision of treatment, payment, enrollment in the health plan, or eligibility for benefits under paragraph (b)(4) of this section on the provision of one of the authorizations.

(4) Prohibition on conditioning of authorizations. A covered entity may not condition the provision to an individual of treatment, payment, enrollment in the health plan, or eligibility for benefits on the provision of an authorization, except:

(i) A covered health care provider may condition the provision of research-related treatment on provision of an authorization under paragraph (f) of this section;

(ii) A health plan may condition enrollment in the health plan or eligibility for benefits on provision of an authorization requested by the health plan prior to an individual's enrollment in the health plan, if:

(A) The authorization sought is for the health plan’s eligibility or enrollment determinations relating to the individual or for its underwriting or risk rating determinations; and

(B) The authorization is not for a use or disclosure of psychotherapy notes under paragraph (a)(2) of this section;

(iii) A health plan may condition payment of a claim for specified benefits on provision of an authorization under paragraph (e) of this section, if:

(A) The disclosure is necessary to determine payment of such claim; and

(B) The authorization is not for a use or disclosure of psychotherapy notes under paragraph (a)(2) of this section; and

(iv) A covered entity may condition the provision of health care that is solely for the purpose of creating protected health information for disclosure to a third party on provision of an authorization for the disclosure of the protected health information to such third party.

(5) Revocation of authorizations. An individual may revoke an authorization provided under this section at any time, provided that the revocation is in writing, except to the extent that:

(i) The covered entity has taken action in reliance thereon; or

(ii) If the authorization was obtained as a condition of obtaining insurance coverage, other law provides the insurer with the right to contest a claim under the policy.

(6) Documentation. A covered entity must document and retain any signed authorization under this section as required by § 164.530(j).

(c) Implementation specifications: core elements and requirements.

(1) Core elements. A valid authorization under this section must contain at least the following elements:

(i) A description of the information to be used or disclosed that identifies the information in a specific and meaningful fashion;

(ii) The name or other specific identification of the person(s), or class of persons, authorized to make the requested use or disclosure;

(iii) The name or other specific identification of the person(s), or class of persons, to whom the covered entity may make the requested use or disclosure;

(iv) An expiration date or an expiration event that relates to the individual or the purpose of the use or disclosure;

(v) A statement of the individual's right to revoke the authorization in writing and the exceptions to the right to revoke, together with a description of how the individual may revoke the authorization;

(vi) A statement that information used or disclosed pursuant to the authorization may be subject to redisclosure by the recipient and no longer be protected by this rule;

(vii) Signature of the individual and date; and

(viii) If the authorization is signed by a personal representative of the individual, a description of such representative's authority to act for the individual.

(2) Plain language requirement. The authorization must be written in plain language.

(d) Implementation specifications: authorizations requested by a covered entity for its own uses and disclosures. If an authorization is requested by a covered entity for its own use or disclosure of protected health information that it maintains, the covered entity must comply with the following requirements.

(1) Required elements. The authorization for the uses or disclosures described in this paragraph must, in addition to meeting the requirements of paragraph (c) of this section, contain the following elements:

(i) For any authorization to which the prohibition on conditioning in paragraph (b)(4) of this section applies, a statement that the covered entity will not condition treatment, payment, enrollment in the health plan, or eligibility for benefits on the individual's providing authorization for the requested use or disclosure;

(ii) A description of each purpose of the requested use or disclosure;

(iii) A statement that the individual may:

(A) Inspect or copy the protected health information to be used or disclosed as provided in § 164.524; and

(B) Refuse to sign the authorization; and

(iv) If use or disclosure of the requested information will result in direct or indirect remuneration to the covered entity from a third party, a statement that such remuneration will result.

(2) Copy to the individual. A covered entity must provide the individual with a copy of the signed authorization.

(e) Implementation specifications: authorizations requested by a covered entity for disclosures by others. If an authorization is requested by a covered entity for another covered entity to disclose protected health information to the covered entity requesting the authorization to carry out treatment, payment, or health care operations, the covered entity requesting the authorization must comply with the following requirements.

(1) Required elements. The authorization for the disclosures described in this paragraph must, in addition to meeting the requirements of paragraph (c) of this section, contain the following elements:

(i) A description of each purpose of the requested disclosure;

(ii) Except for an authorization on which payment may be conditioned under paragraph (b)(4)(iii) of this section, a statement that the covered entity will not condition treatment, payment, enrollment in the health plan, or eligibility for benefits on the individual's providing authorization for the requested use or disclosure; and

(iii) A statement that the individual may refuse to sign the authorization.

(2) Copy to the individual. A covered entity must provide the individual with a copy of the signed authorization.

(f) Implementation specifications: authorizations for uses and disclosures of protected health information created for research that includes treatment of the individual.

(1) Required elements. Except as otherwise permitted by § 164.512(i), a covered entity that creates protected health information for the purpose, in whole or in part, of research that includes treatment of individuals must obtain an authorization for the use or disclosure of such information. Such authorization must:

(i) For uses and disclosures not otherwise permitted or required under this subpart, meet the requirements of paragraphs (c) and (d) of this section; and

(ii) Contain:

(A) A description of the extent to which such protected health information will be used or disclosed to carry out treatment, payment, or health care operations;

(B) A description of any protected health information that will not be used or disclosed for purposes permitted in accordance with §§ 164.510 and 164.512, provided that the covered entity may not include a limitation affecting its right to make a use or disclosure that is required by law or permitted by § 164.512(j)(1)(i); and

(C) If the covered entity has obtained or intends to obtain the individual's consent under § 164.506, or has provided or intends to provide the individual with a notice under § 164.520, the authorization must refer to that consent or notice, as applicable, and state that the statements made pursuant to this section are binding.

(2) Optional procedure. An authorization under this paragraph may be in the same document as:

(i) A consent to participate in the research;

(ii) A consent to use or disclose protected health information to carry out treatment, payment, or health care operations under § 164.506; or

(iii) A notice of privacy practices under § 164.520.

164.510 Uses and disclosures requiring an opportunity for the individual to agree or to object.

A covered entity may use or disclose protected health information without the written consent or authorization of the individual as described by §§ 164.506 and 164.508, respectively, provided that the individual is informed in advance of the use or disclosure and has the opportunity to agree to or prohibit or restrict the disclosure in accordance with the applicable requirements of this section. The covered entity may orally inform the

individual of and obtain the individual's oral agreement or objection to a use or disclosure permitted by this section.

(a) Standard: use and disclosure for facility directories.

(1) Permitted uses and disclosure. Except when an objection is expressed in accordance with paragraphs (a)(2) or (3) of this section, a covered health care provider may:

(i) Use the following protected health information to maintain a directory of individuals in its facility:

(A) The individual's name;

(B) The individual's location in the covered health care provider's facility;

(C) The individual's condition described in general terms that does not communicate specific medical information about the individual; and

(D) The individual's religious affiliation; and

(ii) Disclose for directory purposes such information:

(A) To members of the clergy; or

(B) Except for religious affiliation, to other persons who ask for the individual by name.

(2) Opportunity to object. A covered health care provider must inform an individual of the protected health information that it may include in a directory and the persons to whom it may disclose such information (including disclosures to clergy of information regarding religious affiliation) and provide the individual with the opportunity to restrict or prohibit some or all of the uses or disclosures permitted by paragraph (a)(1) of this section.

(3) Emergency circumstances.

(i) If the opportunity to object to uses or disclosures required by paragraph (a)(2) of this section cannot practicably be provided because of the individual's incapacity or an emergency treatment circumstance, a covered health care provider may use or disclose some or all of the protected health information permitted by paragraph (a)(1) of this section for the facility's directory, if such disclosure is:

(A) Consistent with a prior expressed preference of the individual, if any, that is known to the covered health care provider; and

(B) In the individual's best interest as determined by the covered health care provider, in the exercise of professional judgment.

(ii) The covered health care provider must inform the individual and provide an opportunity to object to uses or disclosures for directory purposes as required by paragraph (a)(2) of this section when it becomes practicable to do so.

(b) Standard: uses and disclosures for involvement in the individual's care and notification purposes.

(1) Permitted uses and disclosures.

(i) A covered entity may, in accordance with paragraphs (b)(2) or (3) of this section, disclose to a family member, other relative, or a close personal friend of the individual, or any other person identified by the individual, the protected health information directly relevant to such person's involvement with the individual's care or payment related to the individual's health care.

(ii) A covered entity may use or disclose protected health information to notify, or assist in the notification of (including identifying or locating), a family member, a personal representative of the individual, or another person responsible for the care of the individual of the individual's location, general condition, or death. Any such use or disclosure of protected health information for such notification purposes must be in accordance with paragraphs (b)(2), (3), or (4) of this section, as applicable.

(2) Uses and disclosures with the individual present. If the individual is present for, or otherwise available prior to, a use or disclosure permitted by paragraph (b)(1) of this section and has the capacity to make health care decisions, the covered entity may use or disclose the protected health information if it:

(i) Obtains the individual's agreement;

(ii) Provides the individual with the opportunity to object to the disclosure, and the individual does not express an objection; or

(iii) Reasonably infers from the circumstances, based the exercise of professional judgment, that the individual does not object to the disclosure.

(3) Limited uses and disclosures when the individual is not present. If the individual is not present for, or the opportunity to agree or object to the use or disclosure cannot practicably be provided because of the individual's incapacity or an emergency circumstance, the covered entity may, in the exercise of professional judgment, determine whether the disclosure is in the best interests of the individual and, if so, disclose only the protected health information that is directly relevant to the person's involvement with the individual's health care. A covered entity may use professional judgment and its experience with common practice to make reasonable inferences of the individual's best interest in allowing a person to act on behalf of the individual to pick up filled prescriptions, medical supplies, X-rays, or other similar forms of protected health information.

(4) Use and disclosures for disaster relief purposes. A covered entity may use or disclose protected health information to a public or private entity authorized by law or by its charter to assist in disaster relief efforts, for the purpose of coordinating with such entities the uses or disclosures permitted by paragraph (b)(1)(ii) of this section. The requirements in paragraphs (b)(2) and (3) of this section apply to such uses and disclosure to the extent that the covered entity, in

the exercise of professional judgment, determines that the requirements do not interfere with the ability to respond to the emergency circumstances.

§ 164.512 Uses and disclosures for which consent, an authorization, or opportunity to agree or object is not required.

A covered entity may use or disclose protected health information without the written consent or authorization of the individual as described in §§ 164.506 and 164.508, respectively, or the opportunity for the individual to agree or object as described in § 164.510, in the situations covered by this section, subject to the applicable requirements of this section. When the covered entity is required by this section to inform the individual of, or when the individual may agree to, a use or disclosure permitted by this section, the covered entity's information and the individual's agreement may be given orally.

(a) Standard: uses and disclosures required by law.

(1) A covered entity may use or disclose protected health information to the extent that such use or disclosure is required by law and the use or disclosure complies with and is limited to the relevant requirements of such law.

(2) A covered entity must meet the requirements described in paragraph (c), (e), or (f) of this section for uses or disclosures required by law.

(b) Standard: uses and disclosures for public health activities.

(1) Permitted disclosures. A covered entity may disclose protected health information for the public health activities and purposes described in this paragraph to:

(i) A public health authority that is authorized by law to collect or receive such information for the purpose of preventing or controlling disease, injury, or disability, including, but not limited to, the reporting of disease, injury, vital events such as birth or death, and the conduct of public health surveillance, public health investigations, and public health interventions; or, at the direction of a public health authority, to an official of a foreign government agency that is acting in collaboration with a public health authority;

(ii) A public health authority or other appropriate government authority authorized by law to receive reports of child abuse or neglect;

(iii) A person subject to the jurisdiction of the Food and Drug Administration:

(A) To report adverse events (or similar reports with respect to food or dietary supplements), product defects or problems (including problems with the use or labeling of a product), or biological product deviations if the disclosure is made to the person required or directed to report such information to the Food and Drug Administration;

(B) To track products if the disclosure is made to a person required or directed by the Food and Drug Administration to track the product;

(C) To enable product recalls, repairs, or replacement (including locating and notifying individuals who have received products of product recalls, withdrawals, or other problems); or

(D) To conduct post marketing surveillance to comply with requirements or at the direction of the Food and Drug Administration;

(iv) A person who may have been exposed to a communicable disease or may otherwise be at risk of contracting or spreading a disease or condition, if the covered entity or public health authority is authorized by law to notify such person as necessary in the conduct of a public health intervention or investigation; or

(v) An employer, about an individual who is a member of the workforce of the employer, if:

(A) The covered entity is a covered health care provider who is a member of the workforce of such employer or who provides a health care to the individual at the request of the employer:

(1) To conduct an evaluation relating to medical surveillance of the workplace; or

(2) To evaluate whether the individual has a work-related illness or injury;

(B) The protected health information that is disclosed consists of findings concerning a work-related illness or injury or a workplace-related medical surveillance;

(C) The employer needs such findings in order to comply with its obligations, under 29 CFR parts 1904 through 1928, 30 CFR parts 50 through 90, or under state law having a similar purpose, to record such illness or injury or to carry out responsibilities for workplace medical surveillance;

(D) The covered health care provider provides written notice to the individual that protected health information relating to the medical surveillance of the workplace and work-related illnesses and injuries is disclosed to the employer:

(1) By giving a copy of the notice to the individual at the time the health care is provided; or

(2) If the health care is provided on the work site of the employer, by posting the notice in a prominent place at the location where the health care is provided.

(2) Permitted uses. If the covered entity also is a public health authority, the covered entity is permitted to use protected health information in all cases in

which it is permitted to disclose such information for public health activities under paragraph (b)(1) of this section.

(c) Standard: disclosures about victims of abuse, neglect or domestic violence.

(1) Permitted disclosures. Except for reports of child abuse or neglect permitted by paragraph (b)(1)(ii) of this section, a covered entity may disclose protected health information about an individual whom the covered entity reasonably believes to be a victim of abuse, neglect, or domestic violence to a government authority, including a social service or protective services agency, authorized by law to receive reports of such abuse, neglect, or domestic violence:

(i) To the extent the disclosure is required by law and the disclosure complies with and is limited to the relevant requirements of such law;

(ii) If the individual agrees to the disclosure; or

(iii) To the extent the disclosure is expressly authorized by statute or regulation and:

(A) The covered entity, in the exercise of professional judgment, believes the disclosure is necessary to prevent serious harm to the individual or other potential victims; or

(B) If the individual is unable to agree because of incapacity, a law enforcement or other public official authorized to receive the report represents that the protected health information for which disclosure is sought is not intended to be used against the individual and that an immediate enforcement activity that depends upon the disclosure would be materially and adversely affected by waiting until the individual is able to agree to the disclosure.

(2) Informing the individual. A covered entity that makes a disclosure permitted by paragraph (c)(1) of this section must promptly inform the individual that such a report has been or will be made, except if:

(i) The covered entity, in the exercise of professional judgment, believes informing the individual would place the individual at risk of serious harm; or

(ii) The covered entity would be informing a personal representative, and the covered entity reasonably believes the personal representative is responsible for the abuse, neglect, or other injury, and that informing such person would not be in the best interests of the individual as determined by the covered entity, in the exercise of professional judgment.

(d) Standard: uses and disclosures for health oversight activities.

(1) Permitted disclosures. A covered entity may disclose protected health information to a health oversight agency for oversight activities authorized by law, including audits; civil, administrative, or criminal investigations; inspections; licensure or disciplinary actions; civil, administrative, or criminal proceedings or actions; or other activities necessary for appropriate oversight of:

(i) The health care system;

(ii) Government benefit programs for which health information is relevant to beneficiary eligibility;

(iii) Entities subject to government regulatory programs for which health information is necessary for determining compliance with program standards; or

(iv) Entities subject to civil rights laws for which health information is necessary for determining compliance.

(2) Exception to health oversight activities. For the purpose of the disclosures permitted by paragraph (d)(1) of this section, a health oversight activity does not include an investigation or other activity in which the individual is the subject of the investigation or activity and such investigation or other activity does not arise out of and is not directly related to:

(i) The receipt of health care;

(ii) A claim for public benefits related to health; or

(iii) Qualification for, or receipt of, public benefits or services when a patient's health is integral to the claim for public benefits or services.

(3) Joint activities or investigations. Nothwithstanding paragraph (d)(2) of this section, if a health oversight activity or investigation is conducted in conjunction with an oversight activity or investigation relating to a claim for public benefits not related to health, the joint activity or investigation is considered a health oversight activity for purposes of paragraph (d) of this section.

(4) Permitted uses. If a covered entity also is a health oversight agency, the covered entity may use protected health information for health oversight activities as permitted by paragraph (d) of this section.

(e) Standard: disclosures for judicial and administrative proceedings.

(1) Permitted disclosures. A covered entity may disclose protected health information in the course of any judicial or administrative proceeding:

(i) In response to an order of a court or administrative tribunal, provided that the covered entity discloses only the protected health information expressly authorized by such order; or

(ii) In response to a subpoena, discovery request, or other lawful process, that is not accompanied by an order of a court or administrative tribunal, if:

(A) The covered entity receives satisfactory assurance, as described in paragraph (e)(1)(iii) of this section, from the party seeking the information that reasonable efforts have been made by such party to ensure that the individual who is the subject of the protected health information that has been requested has been given notice of the request; or

(B) The covered entity receives satisfactory assurance, as described in paragraph (e)(1)(iv) of this section, from the party

seeking the information that reasonable efforts have been made by such party to secure a qualified protective order that meets the requirements of paragraph (e)(1)(v) of this section.

(iii) For the purposes of paragraph (e)(1)(ii)(A) of this section, a covered entity receives satisfactory assurances from a party seeking protecting health information if the covered entity receives from such party a written statement and accompanying documentation demonstrating that:

(A) The party requesting such information has made a good faith attempt to provide written notice to the individual (or, if the individual's location is unknown, to mail a notice to the individual's last known address);

(B) The notice included sufficient information about the litigation or proceeding in which the protected health information is requested to permit the individual to raise an objection to the court or administrative tribunal; and

(C) The time for the individual to raise objections to the court or administrative tribunal has elapsed, and:

(1) No objections were filed; or

(2) All objections filed by the individual have been resolved by the court or the administrative tribunal and the disclosures being sought are consistent with such resolution.

(iv) For the purposes of paragraph (e)(1)(ii)(B) of this section, a covered entity receives satisfactory assurances from a party seeking protected health information, if the covered entity receives from such party a written statement and accompanying documentation demonstrating that:

(A) The parties to the dispute giving rise to the request for information have agreed to a qualified protective order and have presented it to the court or administrative tribunal with jurisdiction over the dispute; or

(B) The party seeking the protected health information has requested a qualified protective order from such court or administrative tribunal.

(v) For purposes of paragraph (e)(1) of this section, a qualified protective order means, with respect to protected health information requested under paragraph (e)(1)(ii) of this section, an order of a court or of an administrative tribunal or a stipulation by the parties to the litigation or administrative proceeding that:

(A) Prohibits the parties from using or disclosing the protected health information for any purpose other than the litigation or proceeding for which such information was requested; and

(B) Requires the return to the covered entity or destruction of the protected health information (including all copies made) at the end of the litigation or proceeding.

(vi) Nothwithstanding paragraph (e)(1)(ii) of this section, a covered entity may disclose protected health information in response to lawful process described in paragraph (e)(1)(ii) of this section without receiving satisfactory assurance under paragraph (e)(1)(ii)(A) or (B) of this section, if the covered entity makes reasonable efforts to provide notice to the individual sufficient to meet the requirements of paragraph (e)(1)(iii) of this section or to seek a qualified protective order sufficient to meet the requirements of paragraph (e)(1)(iv) of this section.

(2) Other uses and disclosures under this section. The provisions of this paragraph do not supersede other provisions of this section that otherwise permit or restrict uses or disclosures of protected health information.

(f) Standard: disclosures for law enforcement purposes. A covered entity may disclose protected health information for a law enforcement purpose to a law enforcement official if the conditions in paragraphs (f)(1) through (f)(6) of this section are met, as applicable.

(1) Permitted disclosures: pursuant to process and as otherwise required by law. A covered entity may disclose protected health information:

(i) As required by law including laws that require the reporting of certain types of wounds or other physical injuries, except for laws subject to paragraph (b)(1)(ii) or (c)(1)(i) of this section; or

(ii) In compliance with and as limited by the relevant requirements of:

(A) A court order or court-ordered warrant, or a subpoena or summons issued by a judicial officer;

(B) A grand jury subpoena; or

(C) An administrative request, including an administrative subpoena or summons, a civil or an authorized investigative demand, or similar process authorized under law, provided that:

(1) The information sought is relevant and material to a legitimate law enforcement inquiry;

(2) The request is specific and limited in scope to the extent reasonably practicable in light of the purpose for which the information is sought; and

(3) De-identified information could not reasonably be used.

(2) Permitted disclosures: limited information for identification and location purposes. Except for disclosures required by law as permitted by paragraph (f)(1) of this section, a covered entity may disclose protected health information in response to a law enforcement official's request for such information for the purpose of identifying or locating a suspect, fugitive, material witness, or missing person, provided that:

(i) The covered entity may disclose only the following information:

(A) Name and address;

(B) Date and place of birth;

(C) Social security number;

(D) ABO blood type and rh factor;

(E) Type of injury;

(F) Date and time of treatment;

(G) Date and time of death, if applicable; and

(H) A description of distinguishing physical characteristics, including height, weight, gender, race, hair and eye color, presence or absence of facial hair (beard or moustache), scars, and tattoos.

(ii) Except as permitted by paragraph (f)(2)(i) of this section, the covered entity may not disclose for the purposes of identification or location under paragraph (f)(2) of this section any protected health information related to the individual's DNA or DNA analysis, dental records, or typing, samples or analysis of body fluids or tissue.

(3) Permitted disclosure: victims of a crime. Except for disclosures required by law as permitted by paragraph (f)(1) of this section, a covered entity may disclose protected health information in response to a law enforcement official's request for such information about an individual who is or is suspected to be a victim of a crime, other than disclosures that are subject to paragraph (b) or (c) of this section, if:

(ii) The individual agrees to the disclosure; or

(iii) The covered entity is unable to obtain the individual's agreement because of incapacity or other emergency circumstance, provided that:

(A) The law enforcement official represents that such information is needed to determine whether a violation of law by a person other than the victim has occurred, and such information is not intended to be used against the victim;

(B) The law enforcement official represents that immediate law enforcement activity that depends upon the disclosure would be materially and adversely affected by waiting until the individual is able to agree to the disclosure; and

(C) The disclosure is in the best interests of the individual as determined by the covered entity, in the exercise of professional judgment.

(4) Permitted disclosure: decedents. A covered entity may disclose protected health information about an individual who has died to a law enforcement official for the purpose of alerting law enforcement of the death of the individual if the covered entity has a suspicion that such death may have resulted from criminal conduct.

(5) Permitted disclosure: crime on premises. A covered entity may disclose to a law enforcement official protected health information that the covered entity believes in good faith constitutes evidence of criminal conduct that occurred on the premises of the covered entity.

(6) Permitted disclosure: reporting crime in emergencies.

(i) A covered health care provider providing emergency health care in response to a medical emergency, other than such emergency on the premises of the covered health care provider, may disclose protected health information to a law enforcement official if such disclosure appears necessary to alert law enforcement to:

(A) The commission and nature of a crime;

(B) The location of such crime or of the victim(s) of such crime; and

(C) The identity, description, and location of the perpetrator of such crime.

(ii) If a covered health care provider believes that the medical emergency described in paragraph (f)(6)(i) of this section is the result of abuse, neglect, or domestic violence of the individual in need of emergency health care, paragraph (f)(6)(i) of this section does not apply and any disclosure to a law enforcement official for law enforcement purposes is subject to paragraph (c) of this section.

(g) Standard: uses and disclosures about decedents.

(1) Coroners and medical examiners. A covered entity may disclose protected health information to a coroner or medical examiner for the purpose of identifying a deceased person, determining a cause of death, or other duties as authorized by law. A covered entity that also performs the duties of a coroner or medical examiner may use protected health information for the purposes described in this paragraph.

(2) Funeral directors. A covered entity may disclose protected health information to funeral directors, consistent with applicable law, as necessary to carry out their duties with respect to the decedent. If necessary for funeral directors carry out their duties, the covered entity may disclose the protected health information prior to, and in reasonable anticipation of, the individual's death.

(h) Standard: uses and disclosures for cadaveric organ, eye or tissue donation purposes. A covered entity may use or disclose protected health information to organ procurement organizations or other entities engaged in the procurement, banking, or transplantation of cadaveric organs, eyes, or tissue for the purpose of facilitating organ, eye or tissue donation and transplantation.

(i) Standard: uses and disclosures for research purposes.

(1) Permitted uses and disclosures. A covered entity may use or disclose protected health information for research, regardless of the source of funding of the research, provided that:

(i) Board approval of a waiver of authorization. The covered entity obtains documentation that an alteration to or waiver, in whole or in part, of the individual authorization required by §164.508 for use or disclosure of protected health information has been approved by either:

(A) An Institutional Review Board (IRB), established in accordance with 7 CFR 1c.107, 10 CFR 745.107, 14 CFR 1230.107, 15 CFR 27.107, 16 CFR 1028.107, 21 CFR 56.107, 22 CFR 225.107, 24 CFR 60.107, 28 CFR 46.107, 32 CFR 219.107, 34 CFR 97.107, 38 CFR 16.107, 40 CFR 26.107, 45 CFR 46.107, 45 CFR 690.107, or 49 CFR 11.107; or

(B) A privacy board that:

(1) Has members with varying backgrounds and appropriate professional competency as necessary to review the effect of the research protocol on the individual's privacy rights and related interests;

(2) Includes at least one member who is not affiliated with the covered entity, not affiliated with any entity conducting or sponsoring the research, and not related to any person who is affiliated with any of such entities; and

(3) Does not have any member participating in a review of any project in which the member has a conflict of interest.

(ii) Reviews preparatory to research. The covered entity obtains from the researcher representations that:

(A) Use or disclosure is sought solely to review protected health information as necessary to prepare a research protocol or for similar purposes preparatory to research;

(B) No protected health information is to be removed from the covered entity by the researcher in the course of the review; and

(C) The protected health information for which use or access is sought is necessary for the research purposes.

(iii) Research on decedent's information. The covered entity obtains from the researcher:

(A) Representation that the use or disclosure is sought is solely for research on the protected health information of decedents;

(B) Documentation, at the request of the covered entity, of the death of such individuals; and

(C) Representation that the protected health information for which use or disclosure is sought is necessary for the research purposes.

(2) Documentation of waiver approval. For a use or disclosure to be permitted based on documentation of approval of an alteration or waiver, under paragraph (i)(1)(i) of this section, the documentation must include all of the following:

(i) Identification and date of action. A statement identifying the IRB or privacy board and the date on which the alteration or waiver of authorization was approved;

(ii) Waiver criteria. A statement that the IRB or privacy board has determined that the alteration or waiver, in whole or in part, of authorization satisfies the following criteria:

(A) The use or disclosure of protected health information involves no more than minimal risk to the individuals;

(B) The alteration or waiver will not adversely affect the privacy rights and the welfare of the individuals;

(C) The research could not practicably be conducted without the alteration or waiver;

(D) The research could not practicably be conducted without access to and use of the protected health information;

(E) The privacy risks to individuals whose protected health information is to be used or disclosed are reasonable in relation to the anticipated benefits if any to the individuals, and the importance of the knowledge that may reasonably be expected to result from the research;

(F) There is an adequate plan to protect the identifiers from improper use and disclosure;

(G) There is an adequate plan to destroy the identifiers at the earliest opportunity consistent with conduct of the research, unless there is a health or research justification for retaining the identifiers, or such retention is otherwise required by law; and

(H) There are adequate written assurances that the protected health information will not be reused or disclosed to any other person or entity, except as required by law, for authorized oversight of the research project, or for other research for which the use or disclosure of protected health information would be permitted by this subpart.

(iii) Protected health information needed. A brief description of the protected health information for which use or access has been determined to be necessary by the IRB or privacy board has determined, pursuant to paragraph (i)(2)(ii)(D) of this section;

(iv) Review and approval procedures. A statement that the alteration or waiver of authorization has been reviewed and approved under either normal or expedited review procedures, as follows:

(A) An IRB must follow the requirements of the Common Rule, including the normal review procedures (7 CFR 1c.108(b), 10 CFR 745.108(b), 14 CFR 1230.108(b), 15 CFR 27.108(b), 16 CFR 1028.108(b), 21 CFR 56.108(b), 22 CFR 225.108(b), 24 CFR

60.108(b), 28 CFR 46.108(b), 32 CFR 219.108(b), 34 CFR 97.108(b), 38 CFR 16.108(b), 40 CFR 26.108(b), 45 CFR 46.108(b), 45 CFR 690.108(b), or 49 CFR 11.108(b)) or the expedited review procedures (7 CFR 1c.110, 10 CFR 745.110, 14 CFR 1230.110, 15 CFR 27.110, 16 CFR 1028.110, 21 CFR 56.110, 22 CFR 225.110, 24 CFR 60.110, 28 CFR 46.110, 32 CFR 219.110, 34 CFR 97.110, 38 CFR 16.110, 40 CFR 26.110, 45 CFR 46.110, 45 CFR 690.110, or 49 CFR 11.110);

(B) A privacy board must review the proposed research at convened meetings at which a majority of the privacy board members are present, including at least one member who satisfies the criterion stated in paragraph (i)(1)(i)(B)(2) of this section, and the alteration or waiver of authorization must be approved by the majority of the privacy board members present at the meeting, unless the privacy board elects to use an expedited review procedure in accordance with paragraph (i)(2)(iv)(C) of this section;

(C) A privacy board may use an expedited review procedure if the research involves no more than minimal risk to the privacy of the individuals who are the subject of the protected health information for which use or disclosure is being sought. If the privacy board elects to use an expedited review procedure, the review and approval of the alteration or waiver of authorization may be carried out by the chair of the privacy board, or by one or more members of the privacy board as designated by the chair; and

(v) Required signature. The documentation of the alteration or waiver of authorization must be signed by the chair or other member, as designated by the chair, of the IRB or the privacy board, as applicable.

(j) Standard: uses and disclosures to avert a serious threat to health or safety.

(1) Permitted disclosures. A covered entity may, consistent with applicable law and standards of ethical conduct, use or disclose protected health information, if the covered entity, in good faith, believes the use or disclosure:

(i)(A) Is necessary to prevent or lessen a serious and imminent threat to the health or safety of a person or the public; and

(B) Is to a person or persons reasonably able to prevent or lessen the threat, including the target of the threat; or

(ii) Is necessary for law enforcement authorities to identify or apprehend an individual:

(A) Because of a statement by an individual admitting participation in a violent crime that the covered entity reasonably believes may have caused serious physical harm to the victim; or

(B) Where it appears from all the circumstances that the individual has escaped from a correctional institution or from lawful custody, as those terms are defined in § 164.501.

(2) Use or disclosure not permitted.. A use or disclosure pursuant to paragraph (j)(1)(ii)(A) of this section may not be made if the information described in paragraph (j)(1)(ii)(A) of this section is learned by the covered entity:

(i) In the course of treatment to affect the propensity to commit the criminal conduct that is the basis for the disclosure under paragraph (j)(1)(ii)(A) of this section, or counseling or therapy; or

(ii) Through a request by the individual to initiate or to be referred for the treatment, counseling, or therapy described in paragraph (j)(2)(i) of this section.

(3) Limit on information that may be disclosed. A disclosure made pursuant to paragraph (j)(1)(ii)(A) of this section shall contain only the statement described in paragraph (j)(1)(ii)(A) of this section and the protected health information described in paragraph (f)(2)(i) of this section.

(4) Presumption of good faith belief. A covered entity that uses or discloses protected health information pursuant to paragraph (j)(1) of this section is presumed to have acted in good faith with regard to a belief described in paragraph (j)(1)(i) or (ii) of this section, if the belief is based upon the covered entity's actual knowledge or in reliance on a credible representation by a person with apparent knowledge or authority.

(k) Standard: uses and disclosures for specialized government functions.

(1) Military and veterans activities.

(i) Armed Forces personnel. A covered entity may use and disclose the protected health information of individuals who are Armed Forces personnel for activities deemed necessary by appropriate military command authorities to assure the proper execution of the military mission, if the appropriate military authority has published by notice in the Federal Register the following information:

(A) Appropriate military command authorities; and

(B) The purposes for which the protected health information may be used or disclosed.

(ii) Separation or discharge from military service. A covered entity that is a component of the Departments of Defense or Transportation may disclose to the Department of Veterans Affairs (DVA) the protected health information of an individual who is a member of the Armed Forces upon the separation or discharge of the individual from military service for the purpose of a determination by DVA of the individual's eligibility for or entitlement to benefits under laws administered by the Secretary of Veterans Affairs.

(iii) Veterans. A covered entity that is a component of the Department of Veterans Affairs may use and disclose protected health information to components of the Department that determine eligibility for or entitlement to, or that provide, benefits under the laws administered by the Secretary of Veterans Affairs.

(iv) Foreign military personnel. A covered entity may use and disclose the protected health information of individuals who are foreign military personnel to their appropriate foreign military authority for the same purposes for which uses and disclosures are permitted for Armed Forces personnel under the notice published in the Federal Register pursuant to paragraph (k)(1)(i) of this section.

(2) National security and intelligence activities. A covered entity may disclose protected health information to authorized federal officials for the conduct of lawful intelligence, counter-intelligence, and other national security activities authorized by the National Security Act (50 U.S.C. 401, et seq.) and implementing authority (e.g., Executive Order 12333).

(3) Protective services for the President and others. A covered entity may disclose protected health information to authorized federal officials for the provision of protective services to the President or other persons authorized by 18 U.S.C. 3056, or to foreign heads of state or other persons authorized by 22 U.S.C. 2709(a)(3), or to for the conduct of investigations authorized by 18 U.S.C. 871 and 879.

(4) Medical suitability determinations. A covered entity that is a component of the Department of State may use protected health information to make medical suitability determinations and may disclose whether or not the individual was determined to be medically suitable to the officials in the Department of State who need access to such information for the following purposes:

(i) For the purpose of a required security clearance conducted pursuant to Executive Orders 10450 and 12698;

(ii) As necessary to determine worldwide availability or availability for mandatory service abroad under sections 101(a)(4) and 504 of the Foreign Service Act; or

(iii) For a family to accompany a Foreign Service member abroad, consistent with section 101(b)(5) and 904 of the Foreign Service Act.

(5) Correctional institutions and other law enforcement custodial situations.

(i) Permitted disclosures. A covered entity may disclose to a correctional institution or a law enforcement official having lawful custody of an inmate or other individual protected health information about such inmate or individual, if the correctional institution or such law enforcement official represents that such protected health information is necessary for:

(A) The provision of health care to such individuals;

(B) The health and safety of such individual or other inmates;

(C) The health and safety of the officers or employees of or others at the correctional institution;

(D) The health and safety of such individuals and officers or other persons responsible for the transporting of inmates or their transfer from one institution, facility, or setting to another;

(E) Law enforcement on the premises of the correctional institution; and

(F) The administration and maintenance of the safety, security, and good order of the correctional institution.

(ii) Permitted uses. A covered entity that is a correctional institution may use protected health information of individuals who are inmates for any purpose for which such protected health information may be disclosed.

(iii) No application after release. For the purposes of this provision, an individual is no longer an inmate when released on parole, probation, supervised release, or otherwise is no longer in lawful custody.

(6) Covered entities that are government programs providing public benefits.

(i) A health plan that is a government program providing public benefits may disclose protected health information relating to eligibility for or enrollment in the health plan to another agency administering a government program providing public benefits if the sharing of eligibility or enrollment information among such government agencies or the maintenance of such information in a single or combined data system accessible to all such government agencies is required or expressly authorized by statute or regulation.

(ii) A covered entity that is a government agency administering a government program providing public benefits may disclose protected health information relating to the program to another covered entity that is a government agency administering a government program providing public benefits if the programs serve the same or similar populations and the disclosure of protected health information is necessary to coordinate the covered functions of such programs or to improve administration and management relating to the covered functions of such programs.

() Standard: disclosures for workers' compensation. A covered entity may disclose protected health information as authorized by and to the extent necessary to comply with laws relating to workers' compensation or other similar programs, established by law, that provide benefits for work-related injuries or illness without regard to fault.

APPENDIX I:
Invitation Letter from Dr. Kerry

Dr Roy Kerry
Advanced Integrative Medicine Center
17 Sixth Avenue
Greenville, PA 16125

October 24, 2003

Dear Valued Patient,

I would like to take this opportunity to introduce you to Cindy Reed, a graduate student studying Integrated Medicine at Holos University Graduate Seminary. Cindy is a nurse and has practiced in Cedar Rapids, Iowa for over 25 years. Cindy and I are involved in a research project looking at ways to decrease stress and improve health using positive intention. Patients of mine who have had services in my office in the last 2 years are being offered the opportunity to participate in this project.

Attached is a letter from Cindy explaining the details of the research. Participants will be asked to fill out 2 questionnaires in October and then again in February next year. The questionnaires should take 10-20 minutes each time. As a thank, you, Cindy will be sending you a relaxation tape by Dr. Norm Shealy, MD after you complete the questionnaires in February.

Your confidentiality is protected. Cindy does not know who is receiving this letter, and will only have the information about you that you return to her on the postcard. She does not have access to any information in your medical record.

As you know, I am always looking for ways to help my patients improve their health. I would encourage you to participate in this research project, which will begin to help us understand how positive intentions can improve health. If you are interested in participating, please fill out and return the postcard to Cindy by November 1.

Thank you for being our valued patient,

Roy E. Kerry, MD

APPENDIX J:
Participant Invitation Letter

HOLOS UNIVERSITY GRADUATE SEMINARY

5607 S. 222nd Road
Fair Grove, MO 65648-8192
Phone: 888-272-6109 Fax: 888-528-0746
www.holosuniversity-edu.org

September 15, 2003

Dear Volunteer,

Thank you for considering participation in my study as a doctoral student in Energy Medicine at Holos University Graduate Seminary. I am also a nurse and have provided health care in the Cedar Rapids Iowa area over the past 20 years, and am interested in providing safe, complimentary ways to improve health care. As part of that interest I am conducting a research project on the impact of positive intention in improving health. You are invited to participate in my pilot project study, which will look at the impact that positive intention has on health improvement of a group of participants. The study will take place from October 1, 2003 to February 28, 2004. Because this is a research study, some participants will receive the positive intention, and some will not. Those participants who do not receive the positive intention during the study period will have the opportunity to receive it for the same duration after the study period is finished, (unless requested otherwise) from March 1, 2004 to May 31, 2004.

There are no known risks to you or your family members for receiving positive intention. Possible benefits to participants are the improvement and/or maintenance of health as well as potential increased ability to cope with stress. The health benefits of positive intention have been documented in the research literature. I hope to demonstrate the health benefits of positive intent.

Participation in the study requires that, at the beginning of the study and approximately three months later, you will complete two brief paper-and-pencil tests. They should take between 15 to 20 minutes to complete. You will then return them to the principal investigator in the postage-paid envelope provided. As a participant in this study, your only obligation is to complete the pre-test prior to September 30, and complete the post-test between March 1 and March 15. The pre- and post-tests will measure anxiety and depression, which are believed sometimes to be the result of stress and may, at times, be

the precursors to major illness. As a thank you for your participation, you will receive a cassette tape on relaxation by C. Norman Shealy, MD after you return the post-test. You may ask questions or receive more information by contacting Cindy Reed at 319-294-5050, or by sending an email to cindyreed5050@yahoo.com.

HOLOS University Graduate Seminary supports the practice of protection for human subjects participating in research. If you would like to be included in this study, please fill out the demographics postcard and return it to me. You should be aware that, even if you agree to participate, you are free to withdraw at any time without penalty by writing (mail to Cindy Reed, 3504 Raven Lane NE, Cedar Rapids, IA 52402), calling (319-294-5050), or e-mailing (cindyreed5050@yahoo.com). I assure you that your name will NOT be associated in any way with the research findings. If you would like any additional information concerning this study or would like a report of the study findings at no cost, please feel free to contact me by phone, email, or regular mail.

Again, your participation is strictly voluntary. If you wish to be included in this study, please fill out the demographics postcard and return it to me.

Thank you for your assistance.

Sincerely,

Cindy Reed BSN, RN, MA
Graduate Student
HOLOS University

APPENDIX K:
Participant Reply Postcard

__Yes, I would like to participate in the research on intention, and I have filled out the information below. Please send me the materials.

___No, I do not wish to participate.

Please return by September 30. Thank you

Name:

Address:

City: State Zip Code (+4 if known)

Birthdate Male Female

Marital Status: Single Married Divorced Widowed

Highest level of Education High School Collage Associate Degree

Bachelor degree
Masters degree
Doctorate

Occupation:

Do you actively participate in some kind of faith based practice? Yes No

CR Reed
3504 Raven Lane NE
Cedar Rapids, IA 52402

Cindy Reed
3504 Raven Lane NE
Cedar Rapids, IA 52402

APPENDIX L:
Group A Thank You/C Invitation

HOLOS UNIVERSITY GRADUATE SEMINARY

5607 S. 222nd Road
Fair Grove, MO 65648-8192
Phone: 888-272-6109 Fax: 888-528-0746
www.holosuniversity-edu.org

The Impact of Intention on Health Improvement Research Study

April 16, 2004

Dear Volunteer,

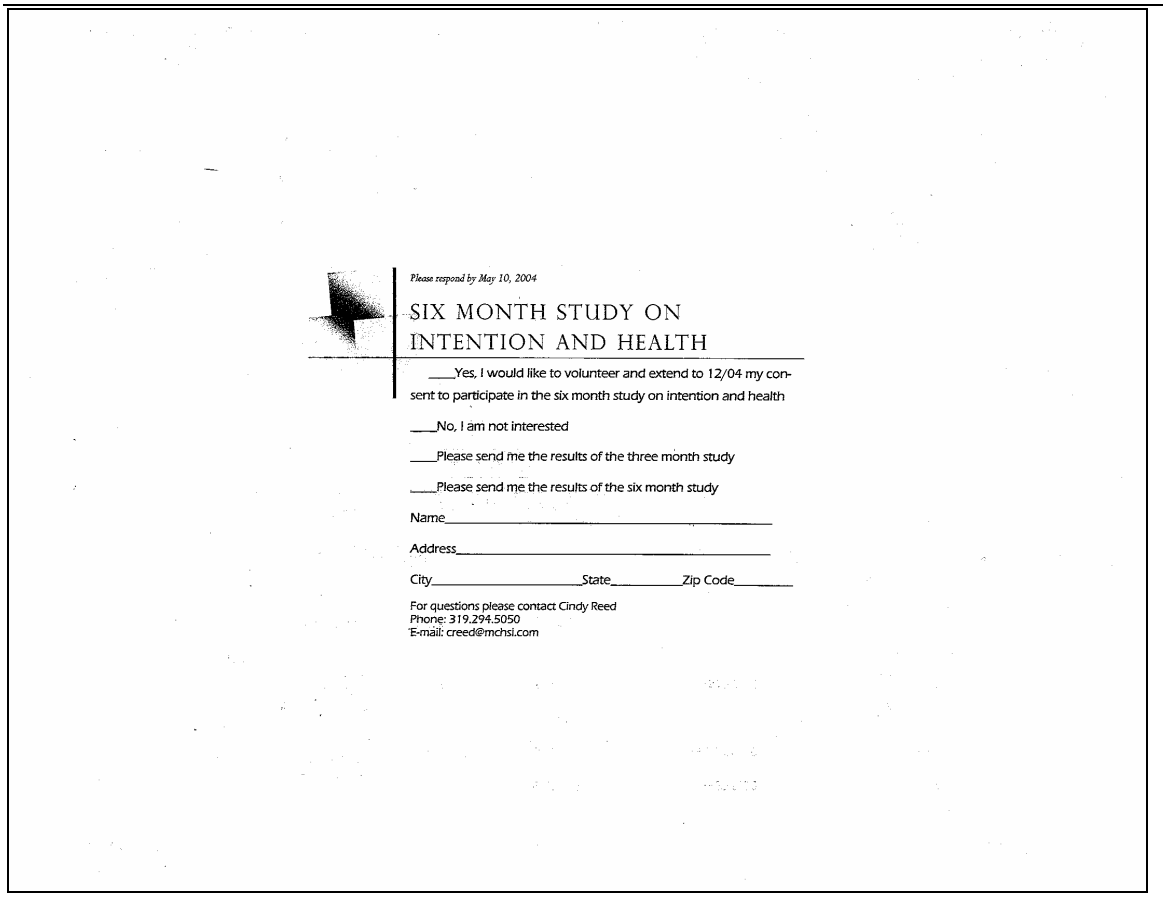
Thank you again for your participation in my research study on the impact of intention on health improvement. The intervention period, which lasted three months, is now complete. As a thank you for your participation, I have enclosed a cassette tape on relaxation by C. Norman Shealy, MD.

Of the initial 284 people who volunteered for the study, 178 completed both the pre and post-tests. 90 of those who completed were in the intervention group, and 88 were in the control group. You were part of the control group, which did not receive the intention for decreased stress and improved health. May 1 you will begin receiving the intention for 3 months. Over the next few months the scores will be tabulated and analyzed by the statistician. Some of you have requested the study findings, and I would anticipate sending those to you early this fall. If you would like any additional information concerning this study or would like a report of the study findings at no cost and you have not yet requested the report, please feel free to return the enclosed postcard or contact me by phone, email, or regular mail.

Next we are doing a 6 month intervention using positive intention specifically directed at stress and depression as well as increased health. You have the opportunity to participate in that study as well. All of the participants in the 6 month study will receive the intervention. There will be no control group. Your participation in the 6 month study would require that you return the enclosed postcard and take the same 3 page post-test again in November. If you are interested in participating please return the enclosed postcard. . If you decide to join the next study, you will begin receiving the intention with that group, and will continue for 6 months. Thank you again for your help with my research study. If you have any questions, please contact me at 319.294.5050 or email me at crreed@mchsi.com.

Thank you

APPENDIX M:
Group B Extension Postcard



Please respond by May 10, 2004

SIX MONTH STUDY ON
INTENTION AND HEALTH

____Yes, I would like to volunteer and extend to 12/04 my consent to participate in the six month study on intention and health

____No, I am not interested

____Please send me the results of the three month study

____Please send me the results of the six month study

Name_____

Address_____

City_____State_____Zip Code_____

For questions please contact Cindy Reed
Phone: 319.294.5050
E-mail: creed@mchsi.com

APPENDIX N:
Participant Welcome Letter

HOLOS UNIVERSITY GRADUATE SEMINARY

5607 S. 222nd Road
Fair Grove, MO 65648-8192
Phone: 888-272-6109 Fax: 888-528-0746
www.holosuniversity-edu.org

The Impact of Intention on Health Improvement Research Study

October 20, 2003

Dear Volunteer,

Thanks for your interest in participating in my research study. Enclosed are the following documents, and my request for each of them:

1. **The Informed Consent Form**: Please read, sign, and return in the enclosed envelope

2. **The Zung Self Rating Scale:** Please read the directions and fill out the form with pen or pencil

3. **The Self Evaluation Questionnaire:** Please read the directions and fill out both pages of the form with pen or pencil

Please return the forms in the envelope provided by **Friday, October 31.** Thank you for your help with my research study. If you have any questions, please contact me at 319.294.5050 or email me at crreed@mcleodusa.net .

Thank you,

Cindy Reed

APPENDIX O:
Consent Form

HOLOS UNIVERSITY GRADUATE SEMINARY

\5607 S. 222nd Road
Fair Grove, MO 65648-8192
Phone: 888-272-6109 Fax: 888-528-0746
www.holosuniversity-edu.org

Informed Consent for the Participation in Research Activities

Principal Investigator: Cindy Reed, BSN, RN, MA
Phone number- Home: 319.294.5050

Title of Pilot Study: The Impact of Intention on Health Improvement

This consent form may contain words that you do not understand. Please ask the study researcher to explain any words that you do not clearly understand.

1. You are invited to participate in a research study conducted by Cindy Reed, a doctoral student in energy medicine. The overall purpose of the study is to evaluate the impact of an Intention Imprinted Electronic Device imprinted with an intention for increased health/decreased stress on depression and anxiety as measured by the Zung Depression Inventory and the State-Trait Anxiety Inventory. The intention will focus on decreasing stress and increasing health, and will be broadcast, much like a radio signal, from a device designed by Stanford Emeritus Physicist Dr. William A Tiller. Your participation via baseline and post intervention measures on the Zung Depression Inventory and the State-Trait Anxiety Inventory will assist in determining if there is an impact from an intention broadcast from an Intention Imprinted Electronic Device.

2. Your participation will involve the following: In order to determine your eligibility for this project, you have been asked to fill out a demographics postcard . Only Adults 18 years of age or older who can read English at a 6th grade level are eligible to participate.
   If you qualify for this study, you will be randomly assigned to an intervention group which will receive the intention, or a control group, which will not receive the intention. At the beginning of the study and approximately three months later, you will complete 2 brief paper and pencil tests. These should take between 15-20 minutes to complete. You will then return these to the principal investigator in the postage paid envelope provided. As a thank you for your participation, you

will receive a cassette tape on relaxation by C. Norman Shealy, MD after you return the post-test.

3. Possible benefits: You have a 50-50 chance of being assigned to the intervention group. If you are assigned to the intervention group, you may see the improvement and/or maintenance of health as well as potential increased ability to cope with stress, decrease of symptoms of anxiety and/or decrease of symptoms of depression. If you are assigned to the control group, you will receive the intervention for one month after the study period is completed and final tests are returned. If you would like a copy of your individual test results and the study findings, these will be provided to you at the end of the study. This study IS NOT diagnostic in nature, and is in no way intended to be a substitute or replacement for any current or future medical care that you may be receiving or may seek.

4. Risks: There are no known risks of receiving positive intention. You may receive little or no benefit from the intention.

5. Your participation is voluntary. You will be starting this study of your own free will without any pressure or coercion. You may choose not to participate in this research study and may withdraw your consent by notifying the principal investigator at any time. The principal investigator may withdraw you from this study if circumstances arise that warrant doing so. There is no cost to you for participation in this study.

6. The confidentiality of your records will be protected. Your records will be kept in a locked file for a period of one year post study and then destroyed. All data will be reported as group data. No individual data will be reported.

7. If you have questions or concerns prior to, during, or after this study, please call (319.294.5050), write (3504 Raven Lane NE Cedar Rapids, IA 52402) or email (cindyreed5050@yahoo.com) the principal investigator, Cindy Reed.

I have read this consent form and agree to participate in the research study described above on the impact of intention on health improvement.

Participant (Please print name): _____Date_____

Signature_____

APPENDIX P:
Participant Thank You and Results

HOLOS UNIVERSITY GRADUATE SEMINARY

5607 S. 222nd Road
Fair Grove, MO 65648-8192
Phone: 888-272-6109 Fax: 888-528-0746
www.holosuniversity-edu.org

July 1, 2005

Dear Participant,

You are receiving this letter because you participated in my research project called, "**The Effect of Intention on Decreasing Anxiety and Depression Utilizing Intention Imprinted Devices"**, and now that the study is over, I wanted to tell you about the results. You may remember that I did the study as part of earning my ThD. and PhD. in Energy Medicine at Holos University Graduate Seminary. I wanted to do it because doctors think stress causes up to 85% of illnesses, and stress often comes out as anxiety or depression. So my study was set up to test whether or not people would have less anxiety and depression if a special machine sent out positive thoughts to them about their health in the form of spiritual energy. As you know, these thoughts are called "intentions" and the machine is called an "Intention-Imprinted Electronic Device" or "IIED", for short. The thoughts (intentions) are put into the machine by trained people who are good at meditation and then the machine sends the intentions out into the atmosphere.

A total of 186 people ended up participating in my project, who signed up after I sent them a letter asking if they wanted to be in the study. They were all patients of four health professionals that I knew (a medical allergy doctor, a chiropractor, a counselor, and a medical intuition class instructor). Here's how the study was set up: First, when

people signed up, some of them were put on a list of people that would receive an intervention (intervention group), and the rest were put on a list of people that would not (control group). I did not know which ones were put into which group – that was done randomly, by someone else, so there wouldn't be any influence on the results. Then, everyone in all of the groups filled out forms that gave them scores on how much anxiety and depression they had at that time. After that, the intervention started for those in the intervention groups, and nothing else happened for the ones in the other (control) groups. At the end of the intervention period, everyone in all of the groups filled out the same forms again, so we could see if their scores on anxiety and depression had gone up or down.

The intervention that people in the intervention groups got was that the IIED sent out positive energy about their health and having less anxiety and depression, while their names were listed on the screen of a computer near the IIED. This energy or "intention" had been placed in the machine by people meditating on it. Some people received the intervention for one month, meaning the machine sent out the intention 24 hours a day for 30 days. Others got it for three months, and some people got it for eight months. The machine was simply set up in someone's office and stayed there sending out its intentions – the people in the study never saw it.

And the study had some very interesting results! There were two kinds of anxiety scores – one is called "state" anxiety (where a person feels anxious right now) and the other is "trait" anxiety (where a person feels anxious in general). Both of these kinds of anxiety, as well as depression, went down for the group of people who were the targets of the intention for three months straight, in comparison to the group who got no intervention during that time. This was even more true for the eight-month test, where the intervention group's scores went down more, as compared to their beginning score. . The results for the one-month test were different, however – "state" anxiety for those who got the intervention actually went up during that month.

I think this is because changes were occurring even at one month, but whenever anything begins to change, stress occurs, even if it is a good change. In other words, I think the intervention caused "state" anxiety at first as things started to change, and then helped to bring it down later, after a few months. We can speculate that at one month changes were starting to occur that would lead to decreased anxiety and depression after three months or more of broadcast intention.

Of course more research has to be done so we can know for sure how much of what we found in this study is really true. But the results are pretty exciting! If you want to read the whole report, I am going to put it on the internet by the end of September at this address: http://www.hugs-edu.net/disserta.htm. Just find the title of my study, "The Effect of Intention on Decreasing Anxiety and Depression Utilizing Intention Imprinted Devices", and double click on it. If you do not have a computer and would like a paper copy, please let me know.

If you have questions about the study or the results, you may write to me at: Cindy Reed, 1546 Iroquois DR NE, Solon, IA, 52333, or email crreed@southslope.net, or you can call me at 319.841.9283. Again, thank you for your time and participation in my study, and for your great help in increasing our understanding of how thoughts and spiritual energy can be used to help make people more healthy.

Sincerely

APPENDIX Q:
Pilot Project

This pilot study is the precursor to a larger study that will evaluate the impact of an Intention-Imprinted Electronic Device (IIED) imprinted with an intention (See Appendix A) for health on depression and anxiety. This pilot project used an Intentionally Imprinted Electrical Device (IIED) with computer and one computer without an IIED on an adult population. The results were measured through pre and post intervention indicators on the Zung Self Rating Depression Scale and the State Trait Anxiety Inventory for adults.

Methodology and Procedure

The IIED/computer and computer without the IIED were focused on randomly selected individuals beginning June 15, 2003, and ending July 15, 2003. The inclusion and exclusion criteria are as follows:

Inclusion Criteria

Age range from 18 years and older

Willing to participate in study via signed consent

Must be able to read English at a 6th grade level

Must complete both pre and post-tests

Exclusion Criteria

Under 18

No current address or unable to locate

Unable to read or comprehend the pre and posts tests

Incomplete pre or post-tests

Discontinuation Criteria

A subject may decline participation for self at anytime during the study at his/her request

Those volunteers who agree to participate in the study were randomly assigned to one of the two study conditions:

Condition A: IIED imprinted with intention with computer scrolling intention along with names and addresses

Condition B: Computer scrolling names and addresses without intention

The assignment of the groups to a particular condition was random and performed by the principal researcher. Those volunteers who reside in the same household were grouped together in the same condition. All subjects were sent an individually addressed letter (some via email) explaining the study and their opportunity to participate. They returned to the principle investigator their demographic information if they wished to participate. Only those who returned their demographic information were included in the study. Participants were not monitored nor contacted about the study after the initial request for participation by the principle investigator or any of the study monitors unless they were willing to participate and gave demographic information. The invitation letters were mailed (some via email) to all potential study participants April 2, 2003. Participants were to have one week to reply to the request for participation, however, I actually allowed 3 weeks. During that time the principle investigator was available via phone and email to answer questions about participation.

The participants then received the consent form, pre-tests, and a self addressed stamped envelope in the mail, which was to be completed within 1 week of receiving the initial materials. In reality, it took approximately 3 weeks to also get the initial information returned.

Procedure

The study utilized an Intentionally Imprinted Electrical Device (IIED) with computer and one computer without an IIED on an adult population. The results were measured through pre and post intervention indicators on the Zung Self Rating Depression Scale and the State Trait Anxiety Inventory for adults. The IIED/computer and computer without the IIED were focused on randomly selected individuals beginning June 15, 2003, and continue for one month until July 15, 2003.

The names and addresses of those in the study were on a computer disks. Only the principal researcher and the research monitor, Dr. Robert Nunley, had access to the disks. The names and addresses of those in the intervention group along with the intention statement were on a computer disk and scrolled continuously on a computer screen.

The space identified is one at a lab previously used for IIED experiments in McLouth, Kansas, at the home office of Dr. Robert Nunley. The imprinted IIED to be used has been on location in use in Kansas since December 31, 2002. The device was originally imprinted via Dr. Tillers' own imprinting process in December 2002, and has been re-imprinted using the same process every three months since that time. The specific intention (see Appendix A) is imprinted into the IIED by four highly self-regulated humans acting from a deep meditative state. The IIED then becomes a host for the

specific intention directed at a specific target experiment, acting as a surrogate for the humans, in effect transferring the specific intention to the experimental site

On June 15, 2003, the names and addresses of all volunteers who consented to participate were placed randomly on a computer disk and loaded onto either an imprinted IIED/computer with intention or a computer with no intention. These remained in place until July 15, 2003.

The intervention group was in close proximity to the IIED, scrolled on a computer screen with the intention for a period of one month. The control group was not in close proximity to the IIED, but still in the same room, scrolled on a computer screen for a period of one month. The pre-test and post-test measures were completed 1 week prior to the study start date, and scheduled to be completed again 1 week after the study end date. However, posts tests were accepted up to 2.5 months after the end of the intervention period, due to the low response rate.

The measurements used were the Zung Self Rating Depression Scale by GlaxcoWellcome (www.fpnotebook.com/PSY85.htm) and the State Trait Anxiety Inventory for Adults by Mind Garden (www.mindgarden.com). The tests were statistically analyzed by mixed analysis of variance with one between groups and one within groups factor to measure a difference (if any) between the pre and post-test scores in aggregate.

Post Intervention

The control group assigned had the opportunity after the study period to have the full intervention of an imprinted IIED/computer for one month, from September 15, 2003 to October 15, 2003. As a thank you for participation, all volunteers who complete both

the pre and post-tests will receive a cassette tape on relaxation by C. Norman Shealy, MD after the post-test is returned.

The data was analyzed to evaluate the hypothesis that intention from an IIED may improve the health by decreasing anxiety and depression of a population. Efficacy was assessed by comparing the pre-and post-test scores on the Zung Self Rating Scale for Depression and the State Trait Anxiety Inventory for adults. The statistician hired specifically for this study has determined the mixed analysis of variance with one between groups and one within groups factor will be used to calculate any differences pre and post for both the intervention and the control group. Pre-test and post-test data were then compared utilizing the mixed analysis of variance with one between groups and one within groups factor to determine what, if any statistical significance exists.

Results

Initially 26 participants who were recruited from friends and family of the investigator agreed to participate, and returned the consents and demographics form. One reminder was sent to participants encouraging them to return their pre-tests, and one reminder to return their post-tests. See Appendix Q for the raw scores from Pilot Group. Pilot Group was small (eleven participants) and included 2 members who experienced significant life events during the intervention period. See Chapter Four for more discussion of results.

The size of Pilot Group (11 participants) makes meaningful analysis difficult, however, I will speculate on the possibilities since this is a new line of research, and the results may be useful in pointing future researchers in different directions for exploration.

Less than half of those that began the study completed it. See Table 24 for a participation summary and Appendix A for the specific intention used with Pilot Group:

Table 24. Pilot Project Participants.

	Returned Consent	Returned Pre-tests	Completed Pre-tests	Returned Post-tests	Completed Post-tests
Total	26	21	20	15	11
Intervention	13	11	10	7	6
Control	13	10	10	8	5

The intervention period for Pilot Group was from June 15, 2003 to July 15, 2003. Eleven subjects of the original 26 completed both the pre and post-tests. Of the 11 who completed, 4 were male and 7 were female. There were 6 in the intervention group (2 M and 4 F) and 5 (2 M and 3 F) in the control group.

Efficacy was assessed by a mixed analysis of variance with one between groups and one within groups' factor comparing the pre-and post-test scores on the Zung Self Rating Scale for Depression and the State Trait Anxiety Inventory for Adults. The differences between the control group and the intervention group are quite striking, though it may be due to the small sample size and the impact of a few individuals with significant life events, rather than the intention. It would seem, according to the raw scores, that the control group scores decreased, which would indicate a decrease in anxiety and depression, while the intervention scores increased, which would indicate an increase in anxiety and depression. See table 25 for the pre-test and post-test means for the Pilot Group:

Table 25. Pre and Post Test Means.

		Control	Intervention
STAI Y-1	Pre	36.333	25.600
	Post	33.500	39.200
	Change	**-2.833**	**+13.6**
STAI Y-2	Pre	38.667	31.600
	Post	35.500	35.600
	Change	**-3.167**	**+4**
Zung	Pre	38.000	29.600
	Post	31.667	32.600
	Change	**-6.333**	**+3**

A 2X2 Mixed ANOVA analysis was performed on all three measures (Zung, STAI-Y1 and STAI-Y2). The change over time of the intervention group from the pre-test to the post-test on the STAI Y-1 state anxiety was significant at p=.041. The pre to post-test result on the STAI-Y2, trait anxiety, was not significant at p=.441. The change over time of the intervention group from the pre-test to the post-test on the Zung depression measure was not significant at p=.419.

The only significant result in the one-month intervention group (Pilot Group) occurred on the STAI Y-1 (state anxiety) at the .041 level. This reflects the higher post-test state anxiety score for the intervention group on the STAI Y-1. This indicates that state anxiety was generally higher for the intervention group after the intervention than it was prior to the intervention.

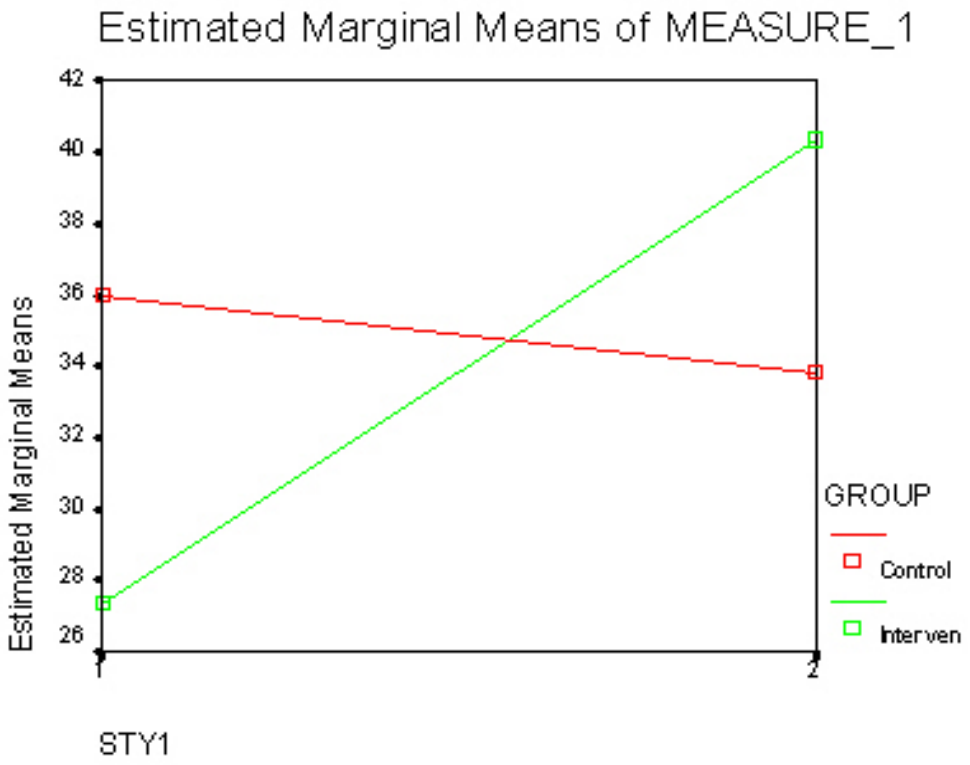
The following tests were performed showing no statistical significance: Pillai's Trace; Roy's Largest Root; Lower-bound; Wilks Lambda; Greenhouse-Geisser; Hotellings Trace; Huynh-Feldt. Mauchly's test of Sphericity was conducted within

subjects to measure potential differences between the pre and post-test scores for the intervention and the control groups. Three (Zung, STAI Y-1, and STAI Total) of the four tests within subjects were not significant. Tests within subjects significance ranged from .121 (STAI total) to .419 (Zung). The only significant result in the one-month intervention group occurred on the STAI Y-1 at the .041 level. See Table 26 and Figure 14 for the test within subjects on STAI Y-1:

Table 26. Pilot Group Tests Within Subjects: STAI Y-1.

	df	F	p
Sphericity Assumed	1	5.768	.041

Figure 14. Pilot Group Test Within Subjects Plot Graph: STAI Y-1.



Within subjects F(2.866)=5.678 p=.041

Between subjects F(153.785)=.037 p=.852

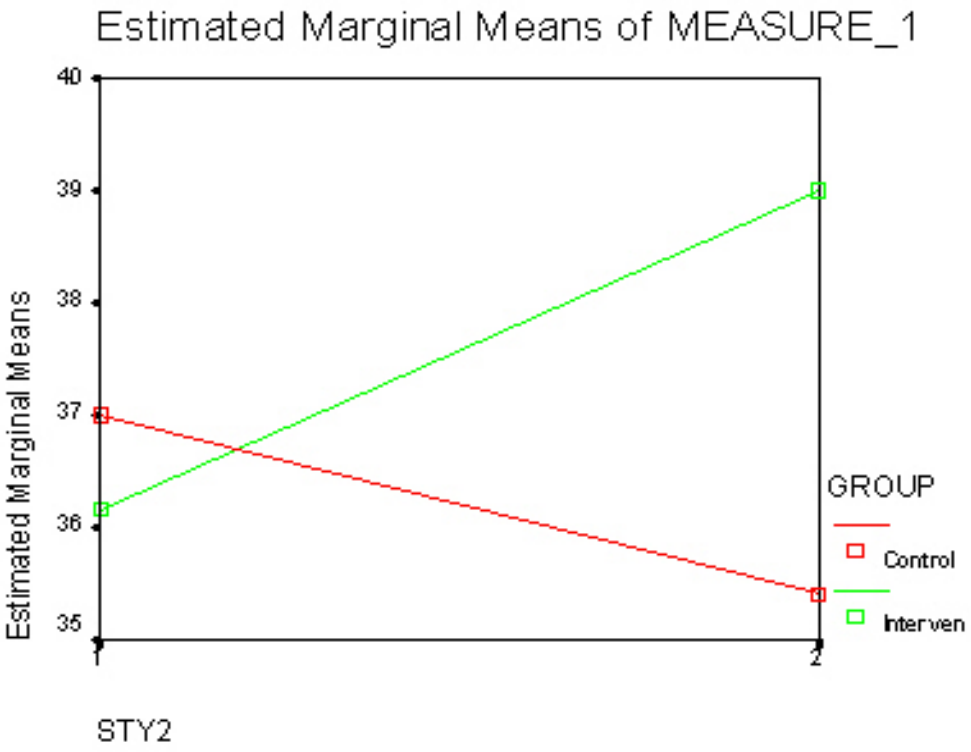
The intervention group had a statistically significant higher score post on the STAI Y-1, indicating that state anxiety is generally higher for the intervention group than it was prior to the intervention.

The trait anxiety, scale, STAI Y-2, showed no significant change between groups. See Table 27 and Figure 15 for Pilot Group's test within subjects on STAI Total that showed no statistical significant change:

Table 27. Pilot Group Tests Within Subjects: STAI Y-2.

	df	F	p
Sphericity Assumed	1	.650	.441

Figure 15. Pilot Group Test Within Subjects Plot Graph: STAI Y-2.



Within subjects F(.050)=.650 p=.441

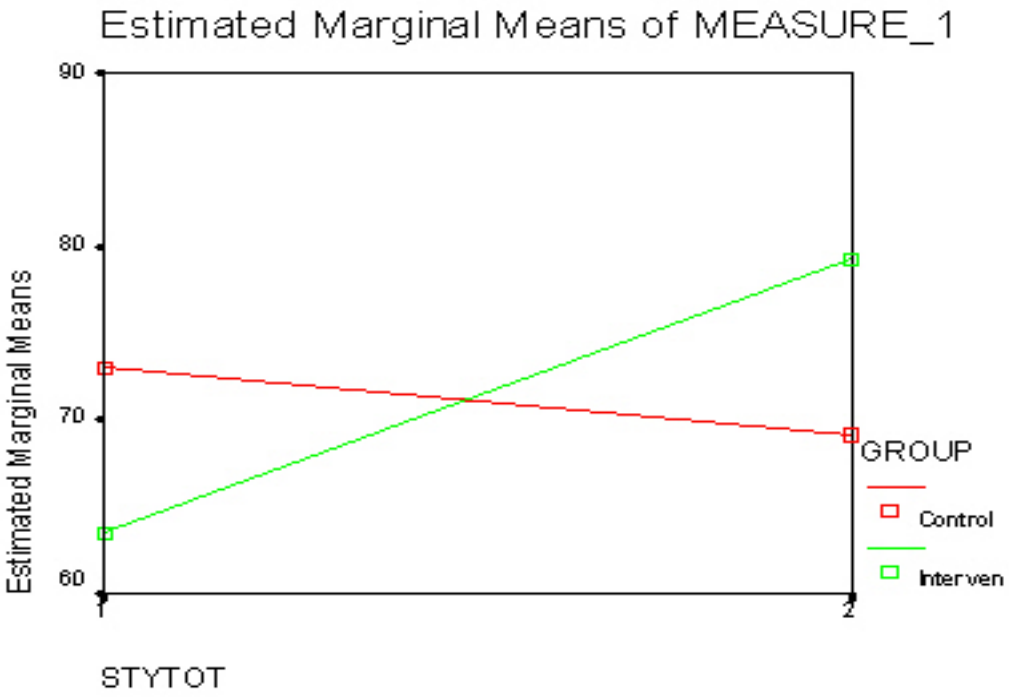
Between subjects F(188.335)=.066 p=.803

The total score on the STAI for both the state and the trait measures was found to be not significant. See Table 28 and Figure 16or Pilot Group's test within subjects on STAI Total that showed no statistical significant change:

Table 28. Pilot Group Test Within Subjects: STAI Total.

	df	F	p
Sphericity Assumed	1	2.933	1.21

Figure 16. Pilot Group Test Within Subjects Plot Graph: STAI Total.



Within subjects F(1.102)=2.993, p=.121

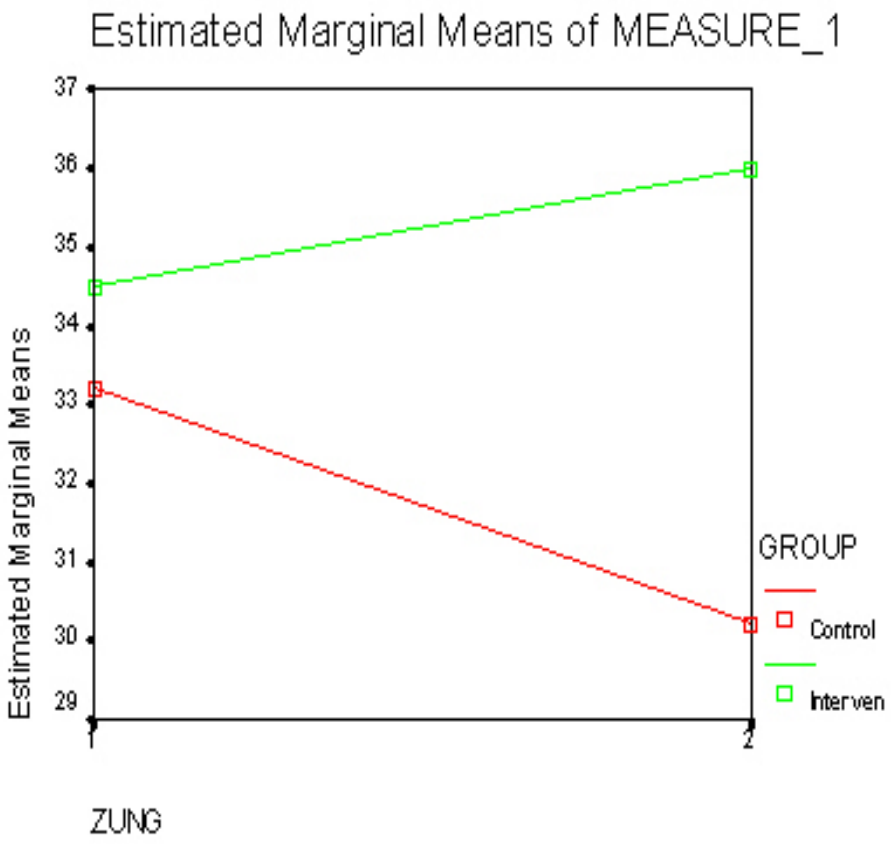
Between subjects F(193.804)=.001 p=.976

See Table 29 and Figure 17 for Pilot Group's test within subjects on the Zung that showed no statistical significant change:

Table 29. Pilot Group Test Within Subjects: Zung.

	df	F	p
Sphericity Assumed	1	.719	.419

Figure 17. Pilot Group Test Within Subjects Plot Graph: Zung.



Within subjects F(0.80)=.719 p=.419

Between subjects F(149.753)=.421 p=.533

Discussion of Pilot Group

Although the sample size for Pilot Group (the one-month intervention group) was very small, a very interesting result was found. The group's mean on the STAI Y-1 scale showed a statistically significant change at the .041 level from the pre-test to one month later at the post-test. The STAI Y-1 is the "state" scale, which evaluates how people feel at the moment, measuring such qualities as feelings of apprehension, tension, nervousness and worry. Scores on this scale generally increase in response to physical danger and psychological stress, but decrease as a result of relaxation training. Hypothesis 1 was that the effect of the intervention would have been to decrease depression and anxiety. However, at least in the STAI Y-1 (state anxiety), not only was there a significant difference from pre-test to post-test, but *the anxiety appeared to increase*, opposite the intended direction. Given the sample size, it's possible that the death of the father of one of the subjects in the intervention group during the study period may have skewed the results.

One could speculate that the IIED was not used for a long enough period of time, or that the positive effect from the IIED might not manifest until months after the intervention. One could also speculate that people experience an increase in stress as they are preparing or making changes that could ultimately make them feel better. The results from the next two intervention groups support all of these notions; however, these variables are all unknowns that need to be explored further.

Pilot Group had a lower than anticipated completion rate at 42% among those volunteers who originally said they would participate in the study. There are a variety of factors that could have interfered with participation. One issue was the time of year that

the project was conducted, which was during the summer time, and feedback from several participants suggested that the pre- or post-tests "just got lost in the shuffle". In addition, three participants left home on extended vacations after agreeing to participate. Also, all participants in this group were solicited from friends and family of the researcher. The familiarity of the researcher and nature of the questionnaires may have been an issue, as some participants may not have realized that the questionnaires were going to ask in depth questions about depression and anxiety. They may have been uncomfortable giving that information to someone they knew who was not their healthcare provider. For example, on the pre-test, one participant did not answer 7 questions in the middle of the Zung test for depression.

The complexity of the questionnaires and minimal follow up may also have been a factor in completion rates for Pilot Group. The STAI was two-sided and required participants to turn the page over. Although the instructions directed them to fill out the form, they did not specifically say to turn to page two, nor was "OVER" typed on the bottom of the page. In addition, the principal investigator followed up on *each request* only once, and may have gotten more participation if more attempts had been made.

This study is one of the first applications of IIED technology to decreasing stress and illness in humans. Although the sample size for Pilot Group was too small to produce any definitive results, an interesting result was observed. The group's mean anxiety score actually increased during the one-month intervention period, and the increase was statistically significant at the .041 level. This could be an anomalous finding related to one person and their particular life circumstances, or this could in fact provide another

direction for study. At this point, there is no definitive explanation but further study is warranted.

APPENDIX R:
Raw Scores For Pilot Group

Pilot Group Control Group

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
12	24	24	26	23	22	21
25	38	47	52	32	36	39
224	30	44	39	31	43	40
242	26	31	20	34	39	24
1183	35	27	35	31	24	26
1190	65	59	56	50	49	40

Pilot Group Intervention Group

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
228	22	23	20	35	23	21
230	23	26	33	43	42	43
231	22	28	30	39	40	39
232	36	40	39	44	34	33
1184	25	41	26	35	39	27

APPENDIX S:
Raw Scores for Group A Control Group

Group A Control Group

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
102	30	50	21	28	24	22
103	43	46	28	59	47	32
106	25	21	20	25	22	26
107	20	20	23	20	24	20
110	40	49	51	49	43	47
111	32	40	28	24	33	26
114	32	34	26	34	32	25
115	38	39	35	27	36	32
118	33	39	32	39	41	36
119	37	42	24	24	34	23
122	38	42	32	29	40	28
123	34	37	38	44	46	49
126	39	42	45	40	41	38
130	32	26	20	23	25	20
138	51	50	44	57	50	47
142	52	48	50	39	47	43
144	51	55	52	56	58	50

Group A Control Group

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
201	62	64	52	55	56	54
202	52	50	62	53	40	54
206	55	43	39	34	28	26
209	47	39	43	44	40	48
213	22	30	34	24	32	28
214	35	29	24	25	28	24
218	38	34	36	41	35	33
221	34	31	30	20	33	29
222	28	33	25	52	36	38
225	42	47	37	29	38	29
226	26	25	23	25	26	23
228	27	20	22	23	24	24
229	48	37	32	21	32	25
235	21	26	33	22	25	27
236	24	35	44	43	40	48
237	32	27	35	30	30	37
239	27	32	33	24	31	37
240	46	39	41	50	45	44
243	33	35	37	33	38	38

Group A Control Group

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
246	25	30	41	27	51	40
247	28	43	35	25	51	35
1004	61	58	56	58	55	50
1007	28	30	46	42	34	39
1008	27	35	35	25	28	27
1012	55	55	43	51	56	52
1015	25	24	29	28	23	22
1016	52	63	52	53	57	51
1019	47	42	45	55	52	49
1023	20	20	20	20	20	26
1027	46	49	51	49	45	51
1033	36	26	26	22	24	27
1038	24	31	34	21	25	40
1042	38	38	38	36	36	37
1051	30	38	41	46	44	46
1055	33	41	44	37	33	41
1083	52	48	42	29	30	30
1087	45	51	44	48	51	52

Group A Control Group

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
1091	35	59	46	54	58	49
1092	42	39	50	40	54	50
1099	50	51	40	42	47	39
1100	59	55	58	46	61	49
1103	38	40	45	46	50	40
1104	49	44	43	34	45	27
1107	60	54	53	54	49	48
1108	43	59	52	63	57	56
1110	61	49	44	64	50	44
1116	52	67	62	31	46	47
1121	46	43	54	47	47	47
1122	46	49	47	33	34	33
1123	60	54	52	63	51	54
1126	41	35	33	24	33	29
1127	42	40	30	51	44	38
1130	39	30	28	29	25	23
1131	49	60	54	53	59	57
1134	36	47	43	34	43	38

Group A Control Group

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
1139	31	28	30	29	36	30
1142	33	40	37	29	37	33
1147	26	31	24	22	28	23
1150	37	56	42	39	48	38
1154	54	66	53	48	52	44
1166	37	41	46	30	38	32
1170	35	29	31	40	31	32
1171	29	46	32	31	43	31
1174	35	35	34	58	36	35
1175	63	66	57	63	62	60
1178	50	48	40	49	42	38
1179	40	41	38	27	27	22
1182	31	35	35	42	43	33
1183	33	23	24	35	27	27
1186	55	52	47	47	51	44
1192	48	40	36	44	41	31
1194	50	45	44	32	37	30

APPENDIX T:
Raw Scores for Group A Intervention Group

Group A Intervention Group

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
100	54	52	49	39	50	39
101	44	41	27	22	32	23
105	32	26	28	27	25	36
108	35	36	28	23	25	22
112	57	40	35	25	26	31
113	38	38	36	22	30	37
116	37	48	42	24	34	31
117	50	52	30	41	40	40
121	60	59	56	40	48	47
125	39	31	33	37	28	32
128	38	35	36	60	57	58
129	41	31	32	42	33	36
132	60	58	51	60	56	61
133	52	52	43	57	49	35
136	25	26	29	30	35	26
139	27	37	26	29	27	26

Group A Intervention Group

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
140	67	59	48	51	58	46
200	29	21	26	20	20	28
203	39	35	30	29	30	25
204	25	28	22	33	31	29
207	45	47	40	54	41	32
208	32	29	38	35	30	25
211	35	30	26	27	30	34
212	38	38	33	31	42	31
215	41	29	30	24	21	26
216	57	55	39	42	53	53
224	27	43	41	47	41	36
227	53	48	49	26	48	42
230	52	45	46	35	36	38
231	31	32	34	31	33	35
232	35	31	32	31	32	30
233	26	31	34	34	36	40
234	32	29	25	24	23	24
242	39	36	20	25	43	32

Group A Intervention Group

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
1001	41	38	47	32	28	38
1005	43	33	33	31	28	33
1013	31	28	31	31	29	34
1014	65	34	36	32	31	29
1018	23	24	34	48	48	28
1022	50	40	54	43	44	44
1025	79	64	52	57	62	54
1029	58	60	51	55	47	52
1032	46	49	37	33	42	37
1035	24	33	25	20	25	30
1036	24	22	22	25	26	28
1040	26	38	37	35	45	42
1043	24	21	22	23	23	25
1044	47	48	42	33	38	29
1047	40	43	33	38	44	33
1053	40	35	34	40	43	40
1066	47	49	34	37	35	27
1078	51	49	60	41	53	54

Group A Intervention Group

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
1078	51	49	60	41	53	54
1082	21	36	26	37	29	35
1086	65	64	55	36	60	37
1089	37	45	39	48	51	53
1094	29	38	28	43	43	39
1098	23	25	29	20	23	32
1102	51	42	36	53	39	36
1105	46	41	42	57	45	46
1106	70	75	73	76	63	66
1109	39	50	56	24	42	45
1114	52	42	49	57	53	49
1115	31	56	52	33	57	51
1118	70	66	50	71	73	58
1120	56	57	52	41	43	39
1125	26	28	29	25	33	39
1128	25	21	20	21	20	20

Group A Intervention Group

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
1129	37	40	28	34	27	24
1132	24	20	26	20	20	27
1141	50	48	46	45	41	32
1145	33	48	39	42	43	35
1148	29	31	25	35	29	24
1149	26	27	28	31	29	30
1152	44	50	43	40	50	35
1157	48	47	38	37	38	34
1160	38	38	31	29	27	31
1161	37	39	32	32	33	29
1164	53	50	49	36	28	33
1165	48	51	56	60	53	53
1168	29	31	28	29	31	35
1169	29	24	24	27	21	20
1172	21	24	22	25	23	22
1176	33	36	32	37	39	35
1180	36	50	43	38	43	43
1184	35	36	21	22	37	24

Group A Intervention Group

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
1187	21	22	27	20	23	25
1188	58	46	33	55	46	44
1189	34	38	34	27	37	50
1190	66	65	61	41	45	33
1193	48	45	38	55	43	41

APPENDIX U:
Raw Scores For Group B

Group B

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
100	54	52	49	39	50	39
101	44	41	27	22	32	23
102	30	50	21	28	24	22
103	43	46	28	59	47	32
105	32	26	28	27	25	36
106	25	21	20	25	22	26
107	20	20	23	20	24	20
108	35	36	28	23	25	22
110	40	49	51	49	43	47
111	32	40	28	24	33	26
112	57	40	35	25	26	31
113	38	38	36	22	30	37
114	32	34	26	34	32	25
115	38	39	35	27	36	32
116	37	48	42	24	34	31
117	50	52	30	41	40	40

Group B

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
118	33	39	32	39	41	36
119	37	42	24	24	34	23
121	60	59	56	40	48	47
122	38	42	32	29	40	28
123	34	37	38	44	46	49
125	39	31	33	37	28	32
126	39	42	45	40	41	38
128	38	35	36	60	57	58
129	41	31	32	42	33	36
130	32	26	20	23	25	20
132	60	58	51	60	56	61
133	52	52	43	57	49	35
136	25	26	29	30	35	26
138	51	50	44	57	50	47
139	27	37	26	29	27	26
140	67	59	48	51	58	46
142	52	48	50	39	47	43
144	51	55	52	56	58	50

Group B

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
200	29	21	26	20	20	28
201	62	64	52	55	56	54
202	52	50	62	53	40	54
203	39	35	30	29	30	25
204	25	28	22	33	31	29
206	55	43	39	34	28	26
207	45	47	40	54	41	32
208	32	29	38	35	30	25
209	47	39	43	44	40	48
211	35	30	26	27	30	34
212	38	38	33	31	42	31
213	22	30	34	24	32	28
214	35	29	24	25	28	24
215	41	29	30	24	21	26
216	57	55	39	42	53	53
218	38	34	36	41	35	33
221	34	31	30	20	33	29
222	28	33	25	52	36	38
224	27	43	41	47	41	36

Group B

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
224	27	43	41	47	41	36
225	42	47	37	29	38	29
226	26	25	23	25	26	23
227	53	48	49	26	48	42
228	27	20	22	23	24	24
229	48	37	32	21	32	25
230	52	45	46	35	36	38
231	31	32	34	31	33	35
232	35	31	32	31	32	30
233	26	31	34	34	36	40
234	32	29	25	24	23	24
235	21	26	33	22	25	27
236	24	35	44	43	40	48
237	32	27	35	30	30	37
239	27	32	33	24	31	37
240	46	39	41	50	45	44
242	39	36	20	25	43	32
243	33	35	37	33	38	38
246	25	30	41	27	51	40

Group B

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
247	28	43	35	25	51	35
1001	41	38	47	32	28	38
1004	61	58	56	58	55	50
1005	43	33	33	31	28	33
1007	28	30	46	42	34	39
1008	27	35	35	25	28	27
1012	55	55	43	51	56	52
1013	31	28	31	31	29	34
1014	65	34	36	32	31	29
1015	25	24	29	28	23	22
1016	52	63	52	53	57	51
1018	23	24	34	48	48	28
1019	47	42	45	55	52	49
1022	50	40	54	43	44	44
1023	20	20	20	20	20	26
1025	79	64	52	57	62	54
1027	46	49	51	49	45	51
1029	58	60	51	55	47	52
1032	46	49	37	33	42	37

Group B

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
1033	36	26	26	22	24	27
1035	24	33	25	20	25	30
1036	24	22	22	25	26	28
1038	24	31	34	21	25	40
1040	26	38	37	35	45	42
1042	38	38	38	36	36	37
1043	24	21	22	23	23	25
1044	47	48	42	33	38	29
1047	40	43	33	38	44	33
1051	30	38	41	46	44	46
1053	40	35	34	40	43	40
1055	33	41	44	37	33	41
1066	47	49	34	37	35	27
1078	51	49	60	41	53	54
1082	21	36	26	37	29	35
1083	52	48	42	29	30	30
1086	65	64	55	36	60	37
1087	45	51	44	48	51	52

Group B

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
1089	37	45	39	48	51	53
1091	35	59	46	54	58	49
1092	42	39	50	40	54	50
1094	29	38	28	43	43	39
1098	23	25	29	20	23	32
1099	50	51	40	42	47	39
1100	59	55	58	46	61	49
1102	51	42	36	53	39	36
1103	38	40	45	46	50	40
1104	49	44	43	34	45	27
1105	46	41	42	57	45	46
1106	70	75	73	76	63	66
1107	60	54	53	54	49	48
1108	43	59	52	63	57	56
1109	39	50	56	24	42	45
1110	61	49	44	64	50	44
1114	52	42	49	57	53	49
1115	31	56	52	33	57	51
1116	52	67	62	31	46	47
1118	70	66	50	71	73	58

Group B

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
1120	56	57	52	41	43	39
1121	46	43	54	47	47	47
1122	46	49	47	33	34	33
1123	60	54	52	63	51	54
1125	26	28	29	25	33	39
1126	41	35	33	24	33	29
1127	42	40	30	51	44	38
1128	25	21	20	21	20	20
1129	37	40	28	34	27	24
1130	39	30	28	29	25	23
1131	49	60	54	53	59	57
1132	24	20	26	20	20	27
1134	36	47	43	34	43	38
1136	40	47	46	43	44	43
1137	35	29	31	30	31	32
1139	31	28	30	29	36	30
1140	24	35	48	23	22	26
1141	50	48	46	45	41	32
1142	33	40	37	29	37	33

Group B

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
1145	33	48	39	42	43	35
1147	26	31	24	22	28	23
1148	29	31	25	35	29	24
1149	26	27	28	31	29	30
1150	37	56	42	39	48	38
1152	44	50	43	40	50	35
1154	54	66	53	48	52	44
1157	48	47	38	37	38	34
1160	38	38	31	29	27	31
1161	37	39	32	32	33	29
1164	53	50	49	36	28	33
1165	48	51	56	60	53	53
1166	37	41	46	30	38	32
1168	29	31	28	29	31	35
1169	29	24	24	27	21	20
1170	35	29	31	40	31	32
1171	29	46	32	31	43	31
1172	21	24	22	25	23	22
1174	35	35	34	58	36	35

Group B

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
1175	63	66	57	63	62	60
1176	33	36	32	37	39	35
1178	50	48	40	49	42	38
1179	40	41	38	27	27	22
1180	36	50	43	38	43	43
1182	31	35	35	42	43	33
1183	33	23	24	35	27	27
1184	35	36	21	22	37	24
1186	55	52	47	47	51	44
1187	21	22	27	20	23	25
1188	58	46	33	55	46	44
1189	34	38	34	27	37	50
1190	66	65	61	41	45	33
1192	48	40	36	44	41	31
1193	48	45	38	55	43	41
1194	50	45	44	32	37	30

APPENDIX V:
Raw Scores for Group B Eight Month Intervention

Group B Eight Month Intervention

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
1183	33	23	24	38	25	24
103	43	46	28	21	47	25
106	25	21	20	39	26	27
107	20	20	23	20	20	20
110	40	49	51	34	36	30
114	32	34	26	29	32	20
115	38	39	35	51	44	45
118	33	39	32	23	39	33
130	32	26	20	23	23	20
142	52	48	50	37	41	34
144	51	55	52	46	56	54
201	62	64	52	44	43	42
202	52	50	62	60	51	64
206	55	43	39	26	24	28
213	22	30	34	54	43	44
214	35	29	24	35	35	28
222	28	33	25	25	32	29

Group B Eight Month Intervention

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
225	42	47	37	25	34	29
235	21	26	33	27	28	36
236	24	35	44	27	37	49
237	32	27	35	31	38	38
239	27	32	33	48	38	40
240	46	39	41	43	42	38
247	28	43	35	27	37	34
1004	61	58	56	49	45	39
1008	27	35	35	29	37	34
1015	25	24	29	20	21	22
1023	20	20	20	21	23	20
1027	46	49	51	38	36	35
1033	36	26	26	23	23	24
1042	38	38	38	32	37	36
1055	33	41	44	44	40	39
1083	52	48	42	21	31	29
1092	42	39	50	41	43	29
1099	50	51	40	43	46	39
1103	38	40	45	57	50	49

Group B Eight Month Intervention

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
1108	43	59	52	30	46	44
1110	61	49	44	52	46	41
1121	46	43	54	31	40	37
1122	46	49	47	25	35	28
1126	41	35	33	31	32	34
1127	42	40	30	68	63	49
1130	39	30	28	32	29	26
1139	31	28	30	54	48	49
1150	37	56	42	47	40	34
1154	54	66	53	49	50	43
1170	35	29	31	41	27	31
1171	29	46	32	33	40	30
1174	35	35	34	33	29	26
1175	63	66	57	49	48	45
1178	50	48	40	35	33	27
1179	40	41	38	30	24	22
1182	31	35	35	27	31	30
1186	55	52	47	43	40	39
1192	48	40	36	39	36	32

Group B Eight Month Intervention

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
1194	50	45	44	37	35	37

APPENDIX W:
Raw Scores for Group B Eleven Month Intervention Group

Group B Eleven Month Intervention

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
224	27	43	41	32	42	35
230	52	45	46	44	26	32
231	31	32	34	27	30	34
232	35	31	32	43	38	38
242	39	36	20	51	55	41
1184	35	36	21	34	40	27
1190	66	65	61	36	38	33
101	44	41	27	58	38	39
108	35	36	28	30	24	22
113	38	38	36	24	39	37
116	37	48	42	45	39	53
117	50	52	30	27	28	26
121	60	59	56	38	45	43
125	39	31	33	26	24	29
136	25	26	29	28	25	21
139	27	37	26	60	42	42
140	67	59	48	55	58	44

Group B Eleven Month Intervention

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
204	25	28	22	28	25	25
208	32	29	38	32	32	40
211	35	30	26	35	33	35
215	41	29	30	29	27	34
233	26	31	34	20	26	30
234	32	29	25	20	20	26
1013	31	28	31	41	37	29
1014	65	34	36	32	32	47
1018	23	24	34	20	20	28
1022	50	40	54	49	45	50
1025	79	64	52	65	60	53
1035	24	33	25	30	25	29
1036	24	22	22	20	22	26
1040	26	38	37	23	38	26
1044	47	48	42	29	26	38
1047	40	43	33	32	38	32
1082	21	36	26	31	32	26
1089	37	45	39	62	56	45
1105	46	41	42	37	41	41

Group B Eleven Month Intervention

	Pre-test			Post-test		
Subject	STAI Y-1	STAI Y-2	Zung	STAI Y-1	STAI Y-2	Zung
1106	70	75	73	74	72	65
1109	39	50	56	23	29	28
1168	29	31	28	42	35	42
1180	36	50	43	45	52	46
1188	58	46	33	39	38	23
1193	48	45	38	41	37	28