Reflexology (William T. Jarvis, Ph.D.)

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Reflexology theory alleges that reflex points on the foot, hand or ear correspond to areas of the body and/or organs. Charts with organs superimposed on the foot, hand or ear allege to map these points. This monograph refers only to foot reflexology, but can be used to infer to all types. Using the chart as a guide, the practitioner probes the theorized reflex points and questions the client. (The chart does not indicate specific diseases or diagnoses but the supposed location of the problem).

Instructions from a "how to" manual tells the reflexologist what to do as he/she probes the foot:

Look for constrictions, or the places where the person feels pain or says ´ouch´; check the accompanying charts to determine what body part corresponds to the sore part of the foot. Tell your friend that he either has a problem in that organ or a strong potential for one [1].

Thus, if something is found at an alleged reflex point, it is "proof" that the system is valid; if nothing is found, the system still is purported to be valid because it predicts future problems. This method represents a no-fail "heads I win, tails you lose" proposition. As obvious as this may be to an objective observer, it is not apparent to practitioners or clients who have been impressed by the system´s seeming validity on a personal experience level.

A similar rationale is employed by iridologists who superimpose organs on the iris, and auricular acupuncturists who superimposed body organs on the ear (a homunculus in the fetal position). The methodology is similar in all of these.

Brief History

William H. Fitzgerald, MD, an early 20th century ear, nose, and throat specialist, introduced reflexology in the United States in 1913 as *zone therapy*. Fitzgerald divided the body into ten vertical zones. These zones were alleged to correspond to the fingers and toes and he taught that "bioelectrical energy" flowed through these zones to "reflex points" in the hands and feet. His method of treatment involved the fastening of wire springs around toes [2]. Eunice D. Ingham further developed reflexology in the 1930s and 1940s concentrating on the feet [3] More recently, books by reflexologist Mildred Carter, a former student of Fitzgerald´s, have promoted foot reflexology as a miraculous health method [4]. Carter´s books have mixed nutrition nonsense with extravagant health claims. A 1993 mailing from Parker Publishing Company stated:

Not only does new Body Reflexology let you cure the worst illnesses safely and permanently, *it can even work to reverse the aging process*, Carter says. Say goodbye to age lines, dry skin, brown spots, blemishes--with Body Reflexology you can actually give yourself an *at-home facelift* with *no* discomfort or disfiguring surgery [2].

Products

A number of products (e.g., sandals, shoe inserts, foot massage devices) are sold based upon the theory of reflexology. When medical claims are made such would become "medical devices" under the law, and would be subject to regulation by the FDA on the federal level, and state food and drug agencies.

A Test of Reflexology

For several years, I had a certified reflexologist (whom I refer to below as "RD") describe the theory and demonstrate the practice of foot reflexology as part of a graduate course in general research methods at Loma Linda University. I would challenge the students to design a controlled trial that would test reflexology. After having demonstrated reflexology before several different class sessions, RD confided that although he believed in reflexology, he was curious to know if it could withstand scientific scrutiny. He asked that a real test be done. At this same time, several physical therapists at Loma Linda University had been promoting reflexology. Kelly Ferris, a physical therapist who was working on a Doctor of Health Science degree in the LLU School of Public Health, was curious about the value of reflexology. Although

Ferris did not believe that "all nerves ended in the feet," as some reflexology charts declared, he was open to the possibility that some sort of switching point may exist in the brain which connected body areas to reflex points on the foot or hand. Ferris agreed to conduct a trial of reflexology´s theory under Jarvis´s direction.

Research Problems

The research problems presented by such a test provide insight into **why nonscientific health care procedures can fool honest people into believing that they work.**

Potential problem #1: Testing a "no-fail" system. It would be impossible to test reflexology´s claim that it can prevent or predict future disease. That would have to involve huge numbers of subjects and take a lifetime for the results. Testing the healing potential of reflexology on sick people raised insurmountable ethical issues. It may sound simple enough to do, but this would mean depriving sick people of standard care, and human beings are not to be toyed with in such a manner. However, it is possible to determine whether a reflexologist could find disordersknown to be present. Ferris and I reasoned that a reflexologist who could not discern that a patient had a specific problem would be unlikely to accurately predict future stomach disease. RD agreed. The team settled on having subjects fill out a questionnaire that mapped their current or recent health problems according to their locations by organs.

Potential problem #2: Overt information between patient and therapist. People willingly share information about their health problems with anyone who they think may be able to help them, or who will provide a sympathetic ear. Knowing that patients could spoil the test by providing the information a reflexologist supposedly can discern from probing the foot, we could not allow free conversation between the patient and therapist. To control this factor, free conversation between the patient and therapist was not permitted. A list of words that the patient could use to communicate was provided. Allowable words were written on paper attached to a clipboard patients held on their laps. Included were "that hurts... a little, some, a lot," and so forth. Although this method presented an entirely different clinical atmosphere than reflexologists are used to, RD agreed that it should not prevent reflexology from working according to its theory, and he agreed that the conditions

were essential to prevent the client from providing the information that probing the foot should yield according to reflexology theory.

Potential problem #3: Subliminal cuing. Subliminal cuing refers to signals that people send without realizing that they are doing so. Conventional wisdom sometimes refers to such cues as "body language." Fortune tellers know it as "muscle-reading." Kenny Roger´s country western hit "The Gambler," refers to cuing with the words, "Son, I´ve made a life out of reading people´s faces, knowing what their cards were by the way they held their eyes." To minimize subliminal cuing, RD and the subjects were separated by a curtain with the subject sitting on a chair with feet protruding through an opening in the curtain. Another person who could see both RD and the subject watched for apparent reactions on the part of subjects. If a reaction was noted that RD could not see because of the curtain, the observer would wait a few seconds and then ask RD to repeat the last 6 or 8 reflex points. RD agreed with this arrangement.

Results

Seventy subjects completed questionnaires that asked about possible conditions in 43 anatomical areas which were currently present, or had been within the past two years. The reflexologist´s findings from a form matched to the questionnaire were correlated to determine the degree of agreement. The results were presented as a vast array of correlations. As expected, five-percent of this number were statistically significant at the .05 level. The important question was whether or not any of these correlations was powerful enough to use as a screening device that indicate a need for further diagnosis. The strongest correlation (r=0.37) was for "stomach problems" which has a predictive value (i.e., coefficient of forecasting efficiency) of 0.07 meaning that reflexology was seven-percent better than random guessing for this condition. Although 7% better than random guessing is enough to make a gambler rich who plays long enough, it is far below an acceptable standard for medical tests. Even RD agreed that reflexology was not an acceptable method of medical screening. Further, RD decided **that since reflexology could not reliably find conditions known to be present, there was no good reason to believe that it was predictive or therapeutic**. From that time on his practice would involve simple foot massages for people who wanted them with no diagnostic or therapeutic claims.

We also designed a study of the therapeutic value of reflexology which was not

carried out. We felt that it would be difficult to justify a therapeutic study of a healing system that had failed our pilot test. Years later, we learned of a study with a design nearly identical to a test that we had planned, which purports to have effectively relieved premenstrual syndrome. In the test, 35 women who complained of premenstrual syndrome (PMS) were randomly assigned to ear, hand and foot reflexology or placebo therapy done on sham reflex points. Subjects kept a daily record on 38 somatic symptoms selected from previous PMS research questionnaires. The treatment group reported significantly fewer symptoms than the placebo group, and these benefits persisted for 2 months after treatment. The placebo group reported that they thought they were receiving genuine reflexology. The authors note that it was very difficult to develop a credible placebo control group which may have been the study´s flaw. Normally, reflexology is soothing, but the placebo treatment was described as "either overly light or very rough." We believe that the differences could simply have been differences in the quality of the massage being administered. As in applications of sham versus genuine acupuncture, the therapists are likely to vary the quality of the procedure in accordance with their own expectations regarding the study´s outcome. This study suggests that massage may relieve PMS symptoms, but does not validate the alleged connection between reflex points and body organs [5].

Reflexology appears to mislead unsophisticated practitioners and clients into believing it has value for the same reasons that fortune tellers and their clients are fooled into believing that their methods work. **Like the fortune tellers, reflexologists go on a multiple-choice fishing expedition in which they elicit information from a client** using a technique similar to the parlor game of "twenty questions." The practitioner does what the words of an old song says, they, "accentuate the positive, eliminate the negative, latch on the affirmative, and don´t mess with Mr. In-Between!" Although we considered this to be only a pilot study, we challenge anyone wishing to test reflexology to control for the factors described above. People who want to know the truth will work hard at eliminating confounding factors.

It is worth remembering that the reason that so-called "double-blind" testing evolved in medical science was that experience taught that even honest, competent medical experts can be misled by their expectations, and other psychological effects, into believing that worthless methods have value. Roberts and others have examined the deceptiveness of clinical illusions by reviewing medical and surgical treatments that were thought to be effective at the time they were reported in the literature, but

which were later found to be ineffective in double-blind, placebo-controlled studies. A random search and analysis settled upon glomectomy for treating asthma, levamisole for treating herpes simplex, photodynamic inactivation for treating herpes simplex, organic solvents for treating herpes simplex, and gastric freezing for treating duodenal ulcer. In all, 6,931 patients were involved. 40% were reported to have excellent outcomes, 30% good outcomes and 30% poor outcomes. It was concluded that nonspecific effects in healing could be expected to produce positive effects in 70% of cases on average in treatments that had failed under controlled conditions. Researchers believe that these effects are optimum when both the doctor and the patient believe strongly that the treatment is efficacious [6]. The safety of science depends upon existence of people who care more for the justice of their methods than any result obtained from their use [7].

Dangers

Reflexology has almost no potential for direct harm, but **its ability to mislead well-meaning people into believing that it can be used for screening for health problems, or that it has real therapeutic value could lead to serious problems**:

- If the system were used to tell someone that they did not have a health problem in a body zone, when in fact they did-resulting in delayed medical treatment.

- If reflexology were substituted for effective therapy. A more subtle danger involves the failure to control the psychological pitfalls discussed in the pilot study described above. Practitioners who have great faith in the uncontrolled clinical experience can develop a mindset that leads them deeper and deeper into trouble. A case-in-point involved a Rosalie Tarpening, a Modesto, California woman who practiced midwifery, reflexology, iridology, and colonics. Tarpening´s only credential was a certificate from the defunct Los Angeles College of Physical Therapy. Tarpening had become overly self-confident about her abilities as a healer. This led her to expand her services into areas way beyond her expertise. This led to conflict with the law, and further alienated her from consumer protection agencies and the tenets of science-based health care. In 1989, Tarpening was found guilty of second-degree murder in the still birth of a baby. According to trial testimony, after a prolonged labor the mother begged to be taken to the hospital, but Tarpening talked her out of it saying that "it was the most natural thing for a baby to be born." [7] Her failure to recognize

the seriousness of the situation caused **a needless death**, and a lifetime of regret on the part of those who lost a precious baby.

NCAHF Recommendations

NCAHF advises practitioners and consumers of reflexology to be skeptical of therapeutic claims beyond the ability of foot massage for relaxation. Health professionals should be cautious about recommending practitioners who make, or encourage patients to believe in, **unproved claims that reflexology is a valid method for assessing health status or for the treatment of diseases.**

References

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5. Oleson T, Flocco W. Randomized controlled study of premenstrual symptoms treated with ear, hand and foot reflexology. Obstetrics and Gynecology 82:906-911, 1993.

6. *Clinical Psychology Review*, 1993;13:375-91.

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8. Seligman K. "Midwife´s trial worries practitioners," *San Francisco Examiner*, May 21, 1989, p.B-1.

Recommended Reading

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- Butler K. *A Consumer´s Guide to* "*Alternative Medicine*." Prometheus, 1992.

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[National Council Against Health Fraud, 1996
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