Acceptance of Change in the Healthcare Paradigm From Reductionism to Holism

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The purpose of this study was to examine acceptance of change of the healthcare paradigm from reductionism to holism among consumers of healthcare, physicians, and registered nurses. Inaccuracy in perception of acceptance of the holistic paradigm can limit conversation about and use of complementary therapies. Study results did not show a significant difference in acceptance of change between the 3 groups.

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A paradigm shift occurs when there are limitations in the scientific explanation or practice of a discipline that cannot be explained by the universally accepted paradigm or thought pattern of the discipline.1 With the discovery of new knowledge, social, and cultural forces, as well as stability and maturity of disciplines, old paradigms become inadequate and are replaced with new paradigms that seem to solve problems the old ones did not address.

The breakdown of old paradigms and emergence of new ones occurs over an extended period of time. During the time of paradigm shift, the 2 contrasting paradigms exist in competition with each other. Some people resist change holding on to the beliefs of the old paradigm, whereas others embrace the new paradigm noting that the old paradigm’s scope of explanation has been reduced. Eventually, the new paradigm, if successful in its ability to solve problems, will be persuasive enough for people to switch loyalty.1 An example of a familiar paradigm shift is accessing data electronically rather than from paper print sources.

With the discovery of new knowledge in the healthcare profession, shift in societal values centered in an empowering and spiritual healing philosophy, as well as stability and maturity of the healthcare discipline, the old paradigm of reductionism is becoming inadequate in its scope of explanation and is being replaced with the emerging holistic paradigm. It is important to view the emerging holistic paradigm in a historical context. In ancient times, the accepted paradigm was that of holism.2 Ancient systems of medicine such as Traditional Chinese, Ayurveda, and Native American emphasized a holistic approach that connects body, mind, and spirit using plant-, animal-, and mineral-based medicines, mind-body and spiritual therapies, and manual techniques to treat and prevent illnesses and maintain well-being. In the second century AD, Galen’s ideas of separation of the body, mind, and spirit, known as the Cartesian split, became the groundwork for the reductionistic paradigm.2 The reductionistic paradigm was further advanced during the 18th century by Sir Isaac Newton and others who espoused an objective approach to healthcare.

Allopathy, the prevailing system of 20th century, is reductionistic in that it separates humans into anatomical systems, reducing study of the systems to the cellular, and even molecular levels. The allopathic approach to medical care is reduced to specialties (nephrology, endocrinology, cardiology, orthopedics, etc). Allopathic medicine views death as failure, focuses on curing disease, and tries to eliminate symptoms and extend life through surgical and pharmaceutical treatments.3 In contrast, the focus of the holistic paradigm and complementary therapies is on healing and making whole, on the mind-body-spirit connection, the view of death as natural, quality of

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life, symptoms as feedback to be listened to, on high touch and caring, and on patient empowerment.³

Strasen³ suggests that the next healthcare revolution will involve features of complementary medicine as patients turn to alternative care because of the holistic and individualized treatment they receive. Shealy⁴ talks about the current evolution of holistic medicine. Because the current system of managed care is so nonhumanistic and nonholistic, the public is rushing to pay out of pocket for alternative medicine that is humanistic and holistic. Shealy suggests that the devolution of the American medical system has actually helped the evolution of holistic medicine.

About the potential of a paradigm change, Chan and Chan⁵ note that while society is entering a postmodern custom, contemporary medicine remains in the modern era with its emphasis on Diagnostic-Related Groups, clinical pathways, and evidence-based medicine. Modernism is the belief in the existence of truth, objectivity, determinism, causality, and impartial observations, whereas postmodernism acknowledges individuality, complexity, and subjectivity of the personal experience. Chan and Chan caution that if medicine remains in the modernist custom, it runs the risk of becoming outmoded in the face of postmodern expectations of patients. Eastwood⁶ agrees that growth of complementary and alternative medicine (CAM) is the result of globalization as well as pervasive and rapid social change. A prominent characteristic of globalization is increased consumer choice. Acting as agents of social change, general practitioners are acknowledging the limitations of orthodox biomedical treatments and responding to consumers’ increasing demands for CAM.⁶

Since the 1990s, there has been a documented increase in interest in holism and the use of complementary therapies among healthcare consumers.⁷,⁸ Little is known about the extent of acceptance of the holistic paradigm by physicians (MDs) and registered nurses (RNs). Even though clinical trial research sponsored by the National Center for Complementary and Alternative Medicine⁹ has determined statistically significant effects of many complementary therapies, there is a perception of opposition to the holistic paradigm.¹⁰ There are examples that healthcare professionals are accepting the holistic paradigm in the proliferation of holistic clinics associated with hospitals and in the use of some complementary therapies such as music, relaxation, and aromatherapy in hospital settings along with conventional pharmaceuticals for pain.

Without knowing for sure how much their health professionals accept the holistic paradigm, consumers of healthcare are reluctant to talk to their physicians about their personal use of complementary therapies for self-treatment.⁷,¹¹ Nurses are reticent to use complementary therapies in clinical practice for fear of reprisal in that their use will be in conflict with the hospital policy or the medical plan of care.¹² Although there is evidence that society is moving toward acceptance of the holistic paradigm, and that new knowledge showing the effectiveness of these modalities is motivating that change, it would seem that everyone would benefit (healthcare consumers, MDs, RNs) by knowing each other’s positions. This study was conducted to find out to what extent healthcare professionals (RNs, MDs) as well as consumers of healthcare have accepted a change in the healthcare paradigm from reductionism to holism. By knowing whether one’s patient, physician, or nurse accepts the holistic paradigm, conversation about and use of complementary therapies will increase.

BACKGROUND OF THE STUDY

Literature review

Consumers

Substantial literature exists that documents increased use of complementary therapies by consumers of healthcare. In 1997, Americans made 629 million visits to alternative practitioners and spent more than 36 billion out-of-pocket dollars for these services.⁷ Therapies most frequently used were for chronic conditions, health maintenance, and illness prevention. The 629 million complementary medicine visits represented more visits than Americans made to primary care physicians for the same period.

In a study of 601 alumni of the Stanford University (35.8% response rate), Jain and Astin¹³ found that 49% of respondents used some CAM in the previous year and 57% used some CAM at least once in the 5 previous years. The most commonly accessed therapies were massage (32%), herbal medicines (20%), meditation (14%), mega vitamins (12%), and chiropractic (10%). A limitation noted of this study is that all respondents were highly educated. In this same study, logistic regression analysis identified significant predictors of CAM disuse during the last year to be office visits to a medical practitioner (P = .05), male gender (P = .05), lack of physician support
healthcare practitioners are “untrustworthy.”

Results of a 2002 US Health and Human Services study\textsuperscript{14} found that some form of CAM therapy was used by 62% of adults in the previous 12 months, which included the use of prayer for health reasons. When prayer was eliminated from the definition, 36% of adults used some form of CAM. Commonly used CAM therapies were prayer, natural products, breathing exercises, meditation, chiropractic, yoga, massage, and diet therapies. CAM use varied according to several sociodemographic variables, and was used most often for pain, back problems, colds, neck problems, joint pain, anxiety, and depression.

Astin\textsuperscript{15} examined reasons why consumers choose alternative care. A randomly selected sample of 1035 (69% response rate) was mailed surveys assessing use of alternative medicine within the previous year. Multiple logistic regression analysis was used to identify predictors of use of alternative healthcare medicine. Predictors were found to be a higher level of education, holistic orientation to health, poorer health status, having a transformational experience that changed the person’s world view, and any of the following health problems: anxiety, chronic pain, urinary tract problems, or back problems. Belonging to a cultural group that is committed to the environment, feminism having interest in spirituality, and personal growth psychology were also predictors of alternative medicine use. Dissatisfaction with conventional medicine, racial/ethnic differences, gender, income, or age did not predict use of alternative medicine. Astin\textsuperscript{15} concluded that individuals use alternative medicine because it is more congruent with their own values, beliefs, and philosophical orientations toward health and life.

A random sample of 416 (63% response rate) Canadian residents found that 37% used at least one holistic therapy during the previous year, and that while 17.8% used complementary therapies for general health and wellness, the majority of the sample used them for treatment of certain conditions most often being fatigue, arthritis, and muscle or back pain.\textsuperscript{16} One third of the respondents (33%) stated that they were “very” or “somewhat likely” to use a holistic therapy in the future. Only 13% of the sample objected to the use of holistic therapies in hospitals, and 5% believed that hospitals using holistic healthcare practitioners are “untrustworthy.”

Physicians

Nineteen previously conducted studies of physician attitudes toward and use of several alternative therapies consumers were reviewed to determine to what extent the physician groups studied incorporated alternative therapies into their practice.\textsuperscript{17} Results showed that acupuncture had the highest rate of physician referral (43%), followed by chiropractic (40%), massage (21%), homeopathy (15%), and herbal medicine (9%). In addition, 53% of physicians believed in the efficacy of chiropractic, 51% in acupuncture, 48% in massage, 26% in homeopathy, and 13% believed in the efficacy of herbal medicine. Rates of CAM practiced by conventional physicians varied from a low of 9% for homeopathy to a high of 19% for chiropractic and massage.

Medical schools are responding to pressure from consumers to evolve with the change in paradigm. Three separate research surveys conducted in 729 schools in the United States (125 medical schools offering an MD degree,\textsuperscript{18} 19 medical schools offering a doctor of osteopathy degree,\textsuperscript{19} and 585 schools offering a nursing degree\textsuperscript{20}) found that 60% of the allopathic medical schools, 95% of osteopathic medical schools, and 84.8% of the nursing schools surveyed teach some form of complementary therapies.

Finnish physician attitudes were surveyed using a mailed questionnaire to assess attitudes toward use of complementary therapies for cancer patients.\textsuperscript{21} A sample of 234 (50.6% response rate) took an overall opposing stance, with 92% agreeing that complementary therapies could not cure cancer, 52% were of the opinion that they should not be used in cancer care, 54% did not think that they are natural, and 48% did not think they were safe. About half (47%) thought complementary therapies could help cancer patients, and 58% felt complementary therapies were useful in relieving stress and anxiety. Attitude toward simultaneous use of conventional medicine and complementary therapies were significantly more positive (\(P = .001\)) among physicians aged 39 year or younger.

A mailed survey of 423 osteopathic primary care physicians (38.4% response rate) found wide variations in the way they view and use complementary and alternative care.\textsuperscript{22} Results of the study also found that general internists were 5 times as likely as pediatricians to talk to their patients about CAM (\(P = .019\)), whereas family physicians were 5 times as likely as pediatricians to talk to their patients about CAM (\(P = .003\)). Female physicians were 4 times as likely as male physicians to talk to their
patients about CAM ($P = .022$), and were 2.7 times as likely as male physicians to refer patients for CAM ($P = .007$). Physicians aged 35 years and younger were 4.9 times as likely than those aged 60 years and older to use CAM for themselves ($P = .010$).

In a related discussion, $^{10}$ 3 possible models of relationships between biomedical and alternative medicines were proposed: opposition, integration, and pluralism. Opposition, the traditional position of the medical profession, is collapsing for sociological, legal, and ethical reasons. Evidence of the collapse of opposition is seen in the licensure of chiropractors and reimbursement for acupuncture. Opposition has been replaced with the model of integration of conventional and alternative medicine. However, integration fosters a double standard and ignores philosophical beliefs and practices of both. Pluralism calls for tolerance and cooperation between the two medical systems recognizing philosophical differences and that both offer clinically valued treatment options. $^{10}$

**Nursing**

Many nursing theories are holistic in that they address the bio-psycho-social-spiritual domains of the person. $^{23,24}$ Holistic therapies naturally flow from nursing theory and provide independent interventions to meet client needs. Frisch $^{23}$ notes that by using complementary therapies within the context of nursing theory, complementary therapies can be moved beyond the skill level to the level of using them to achieve the goals of nursing. Furthermore, documentation of complementary therapies through current nursing taxonomies makes the practice of using them explicitly in the domain of nursing.

A study of 708 nurses revealed that most of them characterize their practice in relation to complementary therapies. $^{25}$ Study respondents indicated that they frequently used several complementary therapies in their practice including relaxation, acupressure, guided imagery, journaling, aromatherapy, healing presence, music, humor, biofeedback, and therapeutic touch. A study of 467 Ohio nurses (17% response rate) was conducted to assess nursing knowledge, perception of efficacy, use for self and clients, and referral patterns for common complementary therapies. $^{26}$ Results showed that for self-care, 81% used prayer, 74% diet, and 41% herbal products. Other complementary therapies used for self-care were visualization/guided imagery, meditation, and massage. These utilization figures are significantly higher than the estimated general population rate of 36%. $^{11}$ The most frequently used therapy with clients was diet (38%), followed by prayer (30%). Nurses also used visualization/guided imagery, healing touch, and massage with patients. The therapies most frequently provided by referral were dietary advice (43%), followed by prayer (30%). Other therapies less frequently referred to were visualization/guided imagery, massage, and meditation. $^{26}$

A descriptive study $^{27}$ was conducted to identify the evidence-based expectations of nurses of conventional and alternative therapies. Surveys were distributed to 1050 Indiana hospital nurses with a 27% return rate ($n = 284$). The majority of the participants were white (96%) and women (95%). Their age ranged from 22 to 63 years, with a mean of 40 years. Results of the study showed that the nurses expected more scientific evidence for conventional therapies than they do for alternative therapies. No significant differences in expectations were found between education, licensure, age, and years of being a nurse.

There is evidence in the nursing literature that points to the importance of a holistic approach to the care of the person with a genetic disability. $^{28,29}$ According to these articles, holism is the foundation for disability nursing and is replacing the medical model worldview of genetics. $^{28}$

A group of nurse practitioners from Connecticut were surveyed with an anonymous mailed questionnaire to determine their knowledge level, personal and professional experience with, and level of interest in alternative therapies. $^{30}$ Of the 202 respondents (73% return rate), 78% described themselves as "slightly" or "quite" knowledgeable about alternative therapies, 49% indicated they "sometimes" or "usually" ask about their clients’ use of alternative therapies, and 65% have referred to or recommend one or more alternative modalities. In addition, 30% of the respondents have provided alternative therapies directly. Thirty-one percent indicated they had received training in one or more therapies, and 65% would be "extremely" or "quite" interested in learning more. Of the sample of 202 nurse practitioners, 63% ($n = 128$) had personal experience with one or more therapies, whereas 35.1% did not.

In summary, the literature was reviewed to find out to what extent healthcare professionals (RNs, MDs) as well as consumers of healthcare have accepted a change in the healthcare paradigm from reductionism to holism. The literature shows increasing demand for alternative and complementary therapies from
consumers. Physicians who have traditionally opposed the use of complementary therapies are showing some evidence of some acceptance in that they are referring patients to some of the more popular complementary therapies.\textsuperscript{17,22} In addition, many medical schools are offering courses in holistic or complementary medicine.\textsuperscript{18} Nurses, who have traditionally embraced a holistic view of health,\textsuperscript{23} are now endorsing the use of complementary therapies in practice. Although evidence was found in the literature of a paradigm shift from reductionism to holism, no studies were found that compared the level of acceptance of the shift between consumers, MDs, and RNs.

**Theoretical framework**

The theoretical framework of this study is based on Kurt Lewin’s Change Theory.\textsuperscript{31} Lewin\textsuperscript{31} believed that change is a process of “unfreezing, changing, and refreezing” where individuals unlearn existing perspectives, open up to change, and relearn new perspectives. In the process of change, there are 2 opposing forces at work: the driving force toward change and the restraining force resisting it.

For a paradigm shift to occur from an old paradigm to a new one, individuals must realize that previous knowledge comprises only part of what is known. The new paradigm enlarges and enriches the existing body of knowledge.\textsuperscript{1} Change must be seen as nonthreatening, friendly, and enriching, and the driving forces must outweigh the restraining forces.

Consumers of healthcare have shown progress in accepting the paradigm shift from reductionism to holism.\textsuperscript{7–9} The driving forces behind the change in paradigms for consumers are more education, chronic health condition, and holistic philosophy toward health.

As a result, consumers allegiance to the reductionistic paradigm is unfreezing. To further support the paradigm shift, many consumers who use complementary therapies have experienced success with them. These positive experiences move them toward acceptance of the holistic paradigm. Restraining forces to change of closed mindedness, allegiance to the reductionistic model, or a particular reductionistic practitioner appear to be weaker than the driving forces. Many consumers have actually entered the refreezing stage, and are integrating holistic philosophy into their value system.

For nurses the change to the holistic paradigm should not be difficult; yet, it is for some. The holistic paradigm is taught during a nurse’s educational experience through exposure to holistic nursing models\textsuperscript{23,24} such as Watson’s Science of Human Caring Philosophy, Rogers Unitary Human Being Model, Parse’s Human Becoming Model, Margaret Newman’s Health as Expanding Consciousness Model, and Erickson et al’s Modeling and Role Modeling Model. Despite this holistic education, nurses are socialized in the work setting into the reductionistic paradigm and rewarded for expertise in its enactment by salary promotions, clinical ladder advancements, and respect by peers and members of the medical community who see expertise in carrying out medical skills and procedures as admirable. This situation results in a professional-bureaucratic role conflict.\textsuperscript{12} As with any conflict, anxiety results. To reduce the tension of the conflict, some nurses who confuse nursing with medicine chose the dependent path of nursing practice. Although nurses who chose the independent path find that utilizing holistic interventions with patients is empowering professionally.\textsuperscript{14}

For physicians accepting the change in paradigms is more difficult.\textsuperscript{17,21,22} Physicians are educated about and receive significant recognition and reward for care for the physical body and high-level reductionistic medical practices such as the use of pharmaceuticals, invasive procedures, and surgeries. To apply change theory, restraining forces for physicians are threats to self-esteem, job security, negative attitude about complementary therapies, lack of education of holistic care, and failure to understand the effects of the postmodern era and globalization on healthcare delivery. Some physicians however are starting to unfreeze their resistance and are moving in the direction of change. Physicians, like consumers, and RNs are increasingly dissatisfied with the managed care approach to healthcare, which they see as increasingly profit driven and impersonal.\textsuperscript{2} The driving forces for MDs are the realization that the holistic care does have potential to improve outcomes for some patients, especially those with chronic illness, can restore the physician-patient relationship, and provide recognition and a sense of satisfaction with the medical practice that the current reductionistic model does not.

**Hypotheses**

The hypotheses for this investigation were as follows:

1. **H1**: There is a difference in the level of acceptance of paradigm shift from reductionism to holism among healthcare consumers, RNs, and MDs.
2. **H2**: There is a difference in the level of acceptance of the holistic paradigm according to several sociodemographic variables.

3. **H3**: There is a difference in level of acceptance of the holistic paradigm according to several categorical variables (personal use of complementary therapy for self-treatment, skeptic or proponent attitude toward, recommendation of, how learned about, and knowledge of complementary therapies).

### Variables

The dependent variable of acceptance of change of the healthcare paradigm from reductionism to holism is tested by a 30-item semantic differential scale that lists 30 characteristics of reductionism and 30 characteristics of holism as opposing anchors on a semantic differential scale. **Reductionism** is defined by the survey instrument according to definitions found in the literature as focus on parts of the whole; combating of illness and disease; medical diagnosis; pharmaceuticals, surgery, and radiation as primary treatments; eradication of symptoms; quantitative information (charts, lab tests, x-ray films, dates); skill and authority of healthcare practitioner; medical technology; view of body as a machine in good or bad repair; specialization (depth of knowledge); authority of physician; passivity of the patient; quantity of life; compliance; view of symptoms as bad; the sum of parts is equal to the whole; objectivity; separation of mind and body; empirical explanation; active intervention; combating disease; view of death as failure; efficiency; emotional neutrality; technical skills; health as freedom from physical disease; neurological and biochemical explanations for behavior, disease; and pathology; behavior of living organism explained in terms of cells/organs of which they are composed, and complex problems are solvable by dividing them into smaller, simpler parts. The **holistic paradigm** is defined by the survey instrument as focus on whole person; restoration of balance and harmony; meaning of situation/events; use of herbs; mind-body and energy therapies; diet; stress management; acceptance, understanding, and/or transformation of symptoms; qualitative information; therapeutic relationship with healthcare practitioner; natural healing; view of the body as a dynamic system and complex energy fields; generalization (breadth of knowledge) inseparable mind-body connection; collaboration; patient responsibility; quality of life; patient decision making; symptoms are feedback; sum of parts is greater than whole; subjectivity; empowerment; view of death as part of life process; patience; emotional sensitivity; human caring skills; health as acceptance of disease; free will explanations for behavior; wellness; behavior explained in terms of relationship between mind-body-spirit; appreciation of the composite characteristics of a problem; and nonspecialization.

Several sociodemographic and categorical variables were tested to see whether they made a difference in the acceptance of the reductionistic or holistic paradigm. Sociodemographic variables included gender, age, race, level of education, and role (consumer, MD, RN). Categorical variables included personal use of complementary therapies for self-treatment (yes, no), recommendation of complementary therapies to others (yes, no), attitude of skeptic or proponent of complementary therapies (skeptic, proponent), how learned about complementary therapies (popular magazine, professional journal, formal class, continuing education offering, public lecture, none of these), and how much is known about complementary therapies (extensive, substantial, moderate, limited, none).

### METHOD

#### Research design

This research was conducted using a comparative quantitative design. The design was chosen to compare physicians, RNs, and consumers regarding their acceptance of reductionism or holism. The study also looked at the effect of various sociodemographic and categorical variables on acceptance of the reductionistic or holistic paradigm.

#### Informed consent

Potential participants were contacted following the approval of the institutional review board of the University of Wisconsin Green Bay to proceed with the study and approval to conduct the study from the health maintenance organization clinic and hospital. Prior to agreeing, each participant (consumers, MDs, RNs) was presented with a written consent form, which was distributed with but not attached to the survey. Anonymity was ensured as signature was not required on the consent form or questionnaire and consent forms were kept separate from the study data. Completion of the survey indicated agreement to participate. Confidentiality of research data was ensured by limiting the use of identifiers and by storing data.
in files accessible only to the investigator. The consent form explained the purpose of the study, benefits and risks, researcher contact information, and assurance of right to withdraw from the study at any time.

**Research instrument**

The researchers designed the Acceptance of Change of Paradigm Survey, which is a semantic differential scale designed to test the extent of acceptance of the holistic versus the reductionistic paradigms of healthcare. The survey consists of 2 parts. The first part contains 5 sociodemographic items (role, gender, age, race, and level of education) and 5 categorical questions (personal use, attitude toward, recommendation of, learning, and knowledge) of complementary therapies. The second part of the survey consists of 30 semantic differential questions composed of opposing characteristics of reductionism versus holism as anchors. Each of the 30 items on the semantic differential scale has a range of 1 to 5 points, and a total possible score ranges from 30 to 150 points. Higher scores of 100 to 150 reflect acceptance of the holistic paradigm and lower scores of 30 to 50 reflect acceptance of reductionism. Example questions (10/30) are presented in Figure 1.

**Validity and reliability**

A panel of judges familiar with the concepts of reductionism and holism determined the validity of the content of the research instrument. The panel consisted of a holistic nurse practitioner, a nursing faculty member who teaches and publishes in the area of complementary therapies, an osteopathic physician, and a healthcare consumer who uses several complementary therapies on a regular basis.

Stability reliability of the research instrument was tested using the test-retest method in a pilot study with a pilot sample of 30 participants representing each of the 3 groups of interest, RNs, MDs, and consumers of healthcare. The pilot study took place in the same health maintenance organization clinic and hospital where the actual study was conducted. The sample completed the survey and then completed it again within 1 week. Several revisions were made to the research instrument during the study phase. Following each revision, successive pilot studies were conducted by testing for reliability using the test-retest method. Finally, desired $r = 0.97$ was achieved. Following determination of stability reliability, the 30 items of the semantic differential scale were subjected to an internal consistency of a test using the Chronbach $\alpha$. The resulting $\alpha$ of .867 demonstrated that the 30 items on the scale were highly consistent.

**Sample and setting**

The convenience sample of 102 participants was drawn from a large health maintenance organization clinic and hospital in south central Wisconsin. The stratified convenience sample consisted of 38 RNs, 30 MDs, and 34 consumers. The MD group was surveyed following a routine Continuing Medication Education.
program they attended. Survey forms were handed to physicians at the end of the program and delivered to the investigator during the week following the meeting (58% response rate, 30/52 in attendance at the Continuing Medication Education meeting). Adult hospitalized patients (consumers) were approached in their rooms by the investigator to obtain consent (85% response rate, 34/40 approached participated in the study). After consent to participate in the study was obtained, the investigator read the survey questions to the patients marking down their responses on blank survey forms. Each patient participant was treated similarly using the structured interview to gather data. Potential RN participants were approached during a weekly staff meeting. Questionnaires were handed to RNs who after consenting to participate in the study were handed the questionnaire and asked to complete it after adjournment of the meeting and hand it directly to the investigator. This data collection technique yielded a return rate of 86% (38/44 asked).

The sample was composed of 58.4% women and 41.6% men. The participants were all adults ranging in age from 20 to older than 60 years. The majority of the participants (59.9%) were between 41 and 60 years of age. Participants were primarily white (89.2%), and most of them had earned a college degree (77.5%). See Table 1 for sociodemographic characteristics of the sample.

Results

Data gathered from the surveys were analyzed using descriptive and inferential statistics. Data were analyzed using analysis of variance if there were more than 2 groups for comparison. The independent samples t test was used if there were 2 groups for comparison. The level of significance on which hypotheses were accepted was $P \leq .05$. Considering the small sample size ($n = 102$) however the effect size (difference between groups) was small.

Descriptive analysis of categorical variables

The majority of the 102 participants (64.7%) indicated that they had personally used complementary therapies for self-treatment, recommended them to others (68.6%), and identified themselves as proponents (57.8%) of complementary therapies. Participants learned about complementary therapies through a variety of methods, with 10.8% learning from popular magazines, 30.4% learning from professional journals, 7.8% completing a formal class in complementary therapies, 17.6% completing a continuing education offering in complementary therapies, 12.7% attending a public lecture or in-services on complementary therapies, and 20.6% did none of the above. The majority of the sample (58.8%) admitted having limited knowledge about complementary therapies (Table 2).

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<th>TABLE 1. Sociodemographic characteristics of the sample</th>
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Measures of central tendency

Grouped according to sociodemographic and categorical variables, mean scores reveal the sentiment of the sample regarding the holistic versus the reductionistic paradigms. Keeping in mind the possible range of scores of 30 (low favoring reductionism) to 150 (high favoring holism), the overall mean score for 102 participants was $M = 101.55$ (SD = 18.75). The mean score of the RN group ($n = 38$) was the highest ($M = 111.45$, SD 12.96), with the MD group ($n = 30$) reporting the lowest mean score ($M = 86.93$, SD = 18.73). The mean scores for females ($M = 104.29$, SD = 17.95) were higher than the mean score for male participants ($M = 98.26$, SD = 19.36). Younger participants in the
complementary therapies were higher (who identified themselves as proponents of
those who have not recommended their use to others (recommended use of complementary therapies to
SD = 17.76) than those who identified themselves as skeptics (M = 97.23, SD = 20.21). Those who said
they learned about complementary therapies through popular magazines had a higher mean score (M =
112.72, SD = 16.53) than the other ways of learning about complementary therapies (professional journal,
formal class, continuing education offering, lecture). Those who said they had substantial knowledge of
complementary therapies had the highest mean score (M = 107.71, SD = 17.06), whereas those who said
they had no knowledge of complementary therapies had the lowest mean score (M = 79.25, SD = 18.08)
(Table 3).

Inferential analysis

Using the analysis of variance statistics, a significant
difference in acceptance of change of paradigm was
found on the basis of groups categorized according to
race (F = 1.96, P = .01). However significant
differences in acceptance of the holistic versus the
reductionistic paradigms were not found for the
sociodemographic variables age (F = 0.911, P = .63),
educational level (F = 9.2, P = .61), or gender (F =
1.61, P = .63). Differences were not significant
according to categorical variables of role (F = 1.02,
P = .48), ever recommended complementary therapies
(F = 1.43, P = .11), how learned about
complementary therapies (F = 1.2, P = .23), or
knowledge about complementary therapies (F = 1.07,
P = .39). Results of the independent samples t test
found a significant difference in the acceptance of the
holistic versus reductionistic paradigms between those
who personally used complementary therapies for
self-treatment and those who did not (t = 2.01, P =
0.05). However, significant differences in acceptance
of change of paradigms were not found for the
categorical variable of skeptic versus proponent of
complementary therapies (Table 4).

DISCUSSION

Utilization of the results of complementary therapy in
this study is greater than that reported in the
literature. This study found that nearly two thirds of
the sample (64.7%), which included similar
representations of healthcare consumers, RNs, and
MDs, had personally used complementary therapies
for self-treatment. More than half (57.8%) of the
sample identified themselves as proponents of

<table>
<thead>
<tr>
<th>TABLE 2. Descriptive analysis of categorical variables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency (%)</strong></td>
</tr>
<tr>
<td>Ever used complementary therapies for self-treatment</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Ever recommended complementary therapies to others?</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Belief in complementary therapies?</td>
</tr>
<tr>
<td>Proponent</td>
</tr>
<tr>
<td>Skeptic</td>
</tr>
<tr>
<td>How learned about complementary therapies?</td>
</tr>
<tr>
<td>Popular magazine</td>
</tr>
<tr>
<td>Professional journal</td>
</tr>
<tr>
<td>Formal class</td>
</tr>
<tr>
<td>Continuing education</td>
</tr>
<tr>
<td>Lecture</td>
</tr>
<tr>
<td>None of the above</td>
</tr>
<tr>
<td>Knowledge of complementary therapies?</td>
</tr>
<tr>
<td>None</td>
</tr>
<tr>
<td>Limited</td>
</tr>
<tr>
<td>Moderate</td>
</tr>
<tr>
<td>Substantial</td>
</tr>
<tr>
<td>Extensive</td>
</tr>
</tbody>
</table>

20- to 29-year-old age bracket scored the highest mean score (M = 114.77, SD = 16.14). Participants with
less than high school diploma scored the lowest mean score (M = 77.50, SD = 28.99). The sample had very
poor representation of different races, with 89% being white (91/102). Despite this limitation, the mean
scores showed African Americans with the lowest mean score (M = 92.50, SD = 28.99), followed by Asian
Americans (M = 92.50, SD = 12.45), whites (M = 102.60, SD = 28.99), and Native Americans who had
the highest mean score (M = 108.50, SD = 19.98).

Mean scores of the sample categorized by personal use for self-treatment, recommendation of, attitude
inward, method of learning, and knowledge of complementary therapies are not surprising. Those
who indicated that they personally used complementary therapies for self-treatment had a
higher mean score (M = 104.47, SD = 16.56) than those who said they did not use them (M = 96.19,
SD = 21.43). Scores of those who said they have
tested use of complementary therapies to
others were higher (M = 103.39, SD = 18.20) than those who have not recommended their use to others
(M = 97.53, SD = 19.57). The mean scores of those
who identified themselves as proponents of
complementary therapies were higher (M = 103.73,
complementary therapies. It is not surprising that personal use of complementary therapies for self-treatment significantly influenced acceptance scores that indicate acceptance of the holistic paradigm ($n = 102, M = 101.55, SD = 18.75$).

The mean scores for RN and healthcare consumer groups were higher than the MD group, meaning RNs and consumers are closer to acceptance of the holistic paradigm than are MDs. The difference in mean scores between the 3 groups is not significant. The finding of nonsignificance is an important outcome of this research. Despite the fact that the mean score of MDs was lower ($M = 86.93$) than the mean score of RNs ($M = 111.45$) or consumers ($M = 103.38$), the difference was not significantly lower.

A few assumptions are of concern to this study. First, it was assumed that holistic healthcare is effective. A second assumption is that physicians have difficulty accepting the holistic paradigm. A third assumption is that there is a growing dissatisfaction with the reductionistic model. A fourth assumption is that patients are concerned about the side effects caused by invasive drugs and procedures, and want to exert more control over their health by using noninvasive holistic therapies.

There are several limitations to the generalizability of this study. The effect size is small due to the small sample size. Perhaps, nonparametric tests should have been used to analyze the data. The lack of significant differences found in sociodemographic variables may be due to the small sample size. One more limitation that may have affected the reported use of complementary therapies could be that professionals and healthcare consumers may not fully recognize that they have used or benefited from complementary therapies. For example, the use of reminiscence may just be viewed as “talking” rather than a complementary therapy and feeling good afterward may just be recognized as a good mood rather than an
increase in self-esteem or lifting of depression. If this were not a limitation, acceptance of the holistic paradigm could have been even greater than results of this study indicate. The only demographic variable that had a significant influence on the acceptance of paradigm change was race, but a limitation to the generalizability of this finding is underrepresentation in the sample of diverse cultural groups. Since many complementary therapies emanate from culturally rooted healthcare practices such as Ayurveda, traditional Chinese medicine, and Native American medicine, the mean score in acceptance of the holistic paradigm from the sample would have been higher if there were more persons in the sample from cultures that value and practice the holistic paradigm.

CONCLUSION

Could it be that MDs are starting to see the relevance of the mind-body connection, the importance of restoring balance, in using natural healing processes, developing therapeutic partnerships with patients, and accepting and transforming symptoms rather than trying to eradicate them? In the office, however, the reality exists that there is lack of insurance reimbursement for use of complementary therapies by MDs. They cannot charge their patients for the use of simple complementary therapies. They can refer patients for biofeedback or to a chiropractor, an acupuncturist, a masseuse, or a reflexologist, or to instructors of yoga, tai chi, or qi gong (who will then charge the patient), but MDs themselves cannot charge for using active listening, music, guided imagery, aromatherapy, prayer, humor, or relaxation during office visits. There is also a serious lack of time for MDs to use complementary therapies during routine office visits that frequently last only 8 minutes each. This unfortunate situation could have had a dramatic influence on MD acceptance of the holistic paradigm and use of complementary therapies.

With acceptance of the holistic paradigm, more choices in treatment modalities will be available to consumers and use by healthcare professions. If healthcare consumers are aware of their healthcare provider’s position regarding holistic health modalities, perhaps they will share with their RN or MD that they are using or have used complementary therapies. They can ask their RN or MD to use or recommend complementary therapies to treat the condition they have come to the office for. Knowing that patients may request complementary therapies will motivate RNs and MDs to increase their knowledge of complementary therapies through continuing education conferences or courses. Nurses who wish to base their practices on the holistic theories of nursing can begin to increase their use of complementary therapies in their daily practice. Nurses will reveal the hidden work of nursing by documenting their use of complementary therapies in the patient record and by conversing with MDs about their use for certain consumers and conditions. Hospitalized, home care, long-term, public health, and other patients will all benefit from their nurses using complementary therapies in their care. Simple low-cost or no-cost complementary therapies such as music therapy, relaxation therapy, guided imagery, aromatherapy, deep breathing exercises, humor, prayer, meditation, journaling, active listening, simple massage, and others can make a big difference in patient outcomes and should be a routine expectation of health consumers and a routine part of care delivered by RNs and MDs.

There are several recommendations for future research. As a first step, factor analysis should be run on the research instrument, which would enhance validity of the instrument. Factor analysis would examine whether the hypothesized constructs are effectively captured by the questionnaire items and, if so, by which specific items. A replication study could be conducted using a larger, more culturally diverse sample size, which would improve the effect size. Complementary studies could be conducted to compare acceptance of change between various healthcare settings.

REFERENCES


