

**Visions: The Journal of Rogerian Nursing Science
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Guidelines For Authors

1. Content must reflect some aspect of Rogers' Science of Unitary Human Beings (research, theoretical issues, etc.)
2. The manuscript must not be submitted elsewhere for consideration.
3. Manuscripts will not be returned.
4. Authors will follow the format of the *Publication Manual of the American Psychological Association* (5thEd.).
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Organization of manuscripts:

1. Identification page (name, address, phone number, affiliation and professional title and running title) (Optional: e-mail address).
2. Title page (no author identification).
3. Abstract followed by 3-4 key words for indexing.
4. Text of 15-20 pages plus references.

Each manuscript will be reviewed by three members of the Review Panel. Final decision rests with the editors. Manuscripts are accepted for review at any time during the year. Deadlines for the next issues are February 1 and July 1. Submit 4 copies of the manuscript.

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EDITORIAL

RHYTHMS OF LIFE

By Sonya R. Hardin RN PhD CCRN NP-C

The environmental and the human field are fluid and boundaryless. An example was recently reported from researchers from the Department of Internal Medicine at Pavia University, Italy. Among healthy adults, cardiovascular rhythms fall in step with musical ones. Heart rate, blood pressure and blood flow were found to change in response to musical crescendos and decrescendos.

The researchers found that musical crescendos -- a gradual increase in volume and intensity -- generally led to increases in blood vessel constriction, blood pressure, heart rate and breathing rate. The opposite was true with decrescendos, a gradual decrease in the music's volume. Some music actually was synchronic heart rhythms. They found that certain rhythmic musical phrases seemed to synchronize participants' "inherent cardiovascular rhythms."

The phrases, from two pieces by Verdi, about 10 seconds long, are similar to the standard oscillations in blood pressure. The 10-second period rhythmic phrases were Giuseppe Verdi's arias "Va pensiero" and "Libiam nei lieti calici." It would seem that music somehow within the human-environmental field is embraced within the nervous system which brings about the cardiovascular rhythms. The Verdi pieces would seem to be calming. While this study may support what many of us have always known, it provides further support of the human environmental field.

Researchers believe that music gets to us because we are rhythmic beings, with rhythm in respiration, heartbeats, brain waves, gait, and speech. The impact of music appears to be in the way musical sounds reach and affect the brain.

The late Dr. Ira N. Alschuler, a psychiatrist and one time director of musical therapy at Wayne County Hospital in Detroit, Michigan, reported that "the mental and spiritual drug of music enters the human being through the thalamus, a part of the brain that is the main relay station for all emotions, sensations, and feelings. Thus music affects moods."

An Australian music researcher Harry Cox says that driven or hyperactive individuals can sometimes be helped by tunes played at a faster tempo and pitch than their own emotional state. Then the music can be slowed to bring about a change in the behavior.

Music in the workplace has been found to increase production and cut down on boredom, fatigue, and tension. At a Midwestern university, productivity was measured in a group of students assigned monotonous manual jobs conducted in silence. Production was increased to 17 percent when a soft background music was added while doing the job.

And for those of you looking to lose weight the easy way, researchers at Johns Hopkins, found that playing slow music during dinner resulted in less food consumption. Eating a meal in silence resulted in 1/3 of the participants requesting a second helping. When spirited tunes such as, "Stars and Stripes Forever" was played 1/2 of the participants wanted a second helping of food. It was only when slow relaxing instrumental music was utilized that the researchers found that no one asked for a second helping and the majority left about 1/4 of their food on the plate.

While playing instrumental music during meals may help to improve health through the reduction of food, there are other methods. One new resource recently made available by the American Heart Association is the Go Red BetterU. It is a free 12-week online nutrition and fitness program that can help you lead your own life, only better. You'll get step-by-step guidance, daily expert tips and an online journal. <http://www.goredforwomen.org/BetterU/index.aspx>

A healthy human-environmental field can be about knowing participation, choice and change. So I hope all of you will focus on a transformative change over the next year, whether it be through the use of music for relaxation, music to decrease food consumption or through a synchronize program.

This edition of the journal has a number of articles which focus on transformative change and knowing participation toward health. As you read this edition, find a comfortable place, but on some soft background music and enjoy.

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EVOLVING PATHS OF TRANSFORMATIVE CHANGE IN ROGERIAN NURSING SCIENCE

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ABSTRACT

This article presents an overview of the history of both Rogerian nursing science and the Society of Rogerian Scholars (SRS), the organization founded by, among others, Martha E. Rogers. Current developments in the science of unitary human beings are highlighted.

Key words: Rogerian nursing science, nursing knowledge, Martha E. Rogers

In preparation for a keynote address at the 2008 conference marking the 20th anniversary of the founding of the Society of Rogerian Scholars (SRS), I compiled this retrospective and prospective view of Rogerian nursing science along with a brief history of SRS. Where we have been as SRS is linked to paths trod by Martha Rogers (1914-1994) as she evolved her science until her passing in 1994. The science will continue to live and evolve as long as there are nurses committed to Rogerian nursing science, and those nurses are usually connected to SRS, the organization charged with advancing Rogerian nursing science.

HISTORICAL PERSPECTIVE: WHERE WE HAVE BEEN

In 1961, at the age of 47, Rogers' first book *Educational Revolution in Nursing* was published. In it she presented a nascent view of what would emerge as her nursing science. She identified three postulates that offered "a basis for a unified conceptualization of man (sic) and the universe" (p. 19):

1. "Through time and space man's continuous interaction with the universe moves him toward and away from multiple potential states of equilibrium" (p. 18).
2. "Man can initiate change and predict the subsequent series of changes within the limits of his own knowledge and a dynamic universe" (p. 19).
3. "Man is uniquely able to unite the past, present, and future in adapting to and changing with an evolving universe" (p. 19).

Eventually concepts of time and space would yield first to four dimensionality and later pandimensionality. Continuous interaction would become mutual simultaneous interaction (MSI) later replaced by continuous mutual process (CMP) and ultimately just mutual process. Equilibrium, homeostasis, etc., would be replaced by homeodynamic. Prediction would yield to probability, which would be replaced by unpredictability. Past, present, and future would be encapsulated in pandimensionality, beyond space and time, and adaptation would give way to

continuous, creative, unpredictable change in which humans can knowingly participate.

It is worth noting Rogers' perspective on nursing given the publication date of 1961. Always ahead of her time, she laid out views on nurses as professionals and nursing education and knowledge development for which she would become famous albeit controversial. For example, nursing must be differentiated by level of education, nurses must be prepared in institutions of higher learning, and the study of what nurses do is not the study of nursing. "Nursing research is the study of man (sic) and his environment—the inevitable interaction and the dynamic interchange of forces that constitute an integral part of man's evolution through time and space. It cannot be confounded with the study of nurses and their functions...It will not arise out of mere observation, but must evolve from intellectual processes" (p. 44). "Nurses determine the roles and responsibilities of nurses within the context of the changing social scene" (p. 55). "Only when nurses are competent in their own field can they move to the broader front of interdisciplinary action" (p. 55). "Respect for self and others must replace defensiveness, low self-esteem, and derogation of differences among nurses" (p. 59).

Rogers' second book, *Reveille in Nursing*, was published in 1964 when she was 50-years-old. Here she identified nursing as a learned profession with its own unique body of abstract knowledge from which to evolve the art of nursing. Nursing's purpose is "to assist individuals, families, and groups to achieve that maximum level of well-being which lies within the potential of each person" (p. 34). The language used throughout the book reflected what she would later see as outdated or inconsistent concepts but which resonated with nursing of the time and much of nursing today: prediction, diagnosis, intervention, and interaction. Simultaneously the book contained ideas she would later expand and refine, for example, the person is an open system, different from the sum of the parts, in constant interaction with the universe, and life is a process of becoming.

Reveille advanced her call for education and scholarship in nursing. "Society must be safeguarded from continuing interchangeable use of professional, technical, and vocational nurses" (p. 95). "Freedom to achieve excellence must be within the province of all who nurse. Employing agencies must provide a climate in which each person can develop his (sic) potentials to the utmost" (p. 95). "The march of professionally educated nurses onto the panoramic scene in the nation's health services redefines the boundaries of nursing practice. Knowledgeable compassion replaces emotional naivete" (p. 77).

In 1970 F. A. Davis published Rogers' *An Introduction to the Theoretical Basis of Nursing*; she was now 56-years-old. The book, however, did not represent the culmination of Rogerian wisdom, although she would never revise it in line with the continuing evolution of her ideas, despite her repeated assertions over the ensuing years that the book would be more accurate if three-quarters of the pages were torn out. Rogers would be 78-years-old upon the publication in 1992

of her seminal article in *Nursing Science Quarterly*, which stands as the most up-to-date summary of her nursing science (Rogers, 1992).

In the 1970 book Rogers identified five assumptions and four principles of homeodynamics. Rogers carefully built a supporting foundation for her original ideas, showing how they were similar to, expanded on, or offered new insights into views emerging concurrently in other disciplines. Although the assumptions and principles were later modified, the book is historically significant for this foundation but problematic for those trying to understand her later formulation of Rogerian nursing science. For example, the second assumption, “Man (sic) and environment are continuously exchanging matter and energy with one another” (p. 54) conveys interaction between two separate entities in what appears to be a linear process. Rogers’ later thinking was of an integral person-environment mutual process, an inseparable unity that negates the possibility of an exchange between/among separate entities. Her four principles, reciprocity, synchrony, helicy, and resonancy, were later modified to three. In the mid-1970s she replaced reciprocity and synchrony with complementarity. By 1982 she had replaced complementarity with integrality. The process, nature, and context of change now are preserved in the three principles of resonancy, helicy, and integrality. Language used in the book still reflected concepts of disease prevention, health promotion, diagnosis, and intervention.

Throughout the 1970s and 1980s Rogers used the term four dimensional to indicate a “nonlinear domain without spatial or temporal attributes” (Rogers, 1986, p.5). She was never satisfied with that word, finding that people often confused her meaning with Einstein’s concept of four dimensionality. Rogers (1990) briefly tried multidimensional but was not comfortable with the implication of multiple dimensions, a bringing together of pieces or parts, not what she intended to convey. In 1991 she had a eureka experience and settled on pandimensional, with pan as a prefix conveying union, wholeness, the unitary whole (EUREKA!, 1991). Also during this time the Science of Unitary Man became the Science of Unitary Human Beings in recognition that man was too limiting a term.

Rogers provided handouts, frequently updated, to her students throughout the 1970s and 1980s, including information not always found in the latest book. One was a glossary of key terms and their definitions. In 1978 this list included synergy, entropy, negentropy, and four dimensional. In 1980 she added science, art, energy field, and pattern. In 1982 she deleted synergy and entropy and added learned profession. In 1990 the list was composed of learned profession, science, art, negentropy, energy field, pattern, pandimensional, unitary human being, and environment.

A revised glossary emerged out of group discussions with Rogers. It ran as an update and expansion in the fall 1991 issue of *Rogerian Nursing Science News* (Glossary, 1991). However, in the winter-spring 1992 issue of the newsletter, Rogers noted that this list was for discussion only, with the 1990 version standing as the official one (Glossary Update, 1992). Unfortunately, the

discussion did not continue, as there are some interesting ideas in the revision as well as potentially problematic ones.

First, Rogers considered a name change, Science of Irreducible Human and Environmental Energy Fields, to highlight the person-environment mutual process as the focus, giving equal attention to environment in the name of her science. The glossary contained the following terms with definitions: nursing, nursing science; nursing theories; nursing research; research methods; energy field; form; pattern; pandimensional; human field; environmental field; practice of nursing; and nurse. Here she defined energy field as the form of the living and non-living, a unifying concept signifying the dynamic nature of the unitary whole. She encountered a potential problem with her definition of form as the essential nature of a thing as distinguished from matter, reminiscent of spirit-body distinctions and similar to problems encountered with the term "essence." Nurse was defined as a person educated to use nursing knowledge to care for irreducible human and environmental energy fields, with level and scope of practice commensurate with academic preparation. The purpose of nursing is to promote well-being and health wherever people are in the life process, including dying. Nurses help people participate knowingly in the life process and actualize potentials deemed most commensurate with well-being. Nurses and clients participate mutually and knowledgeably to optimize potentials. The practice of nursing is the imaginative, creative use of nursing science for human betterment. Nursing theories are statements distinctive of nursing's abstract system that describe, explain, and promote understanding of phenomena of concern to nursing. Prediction, often found in other definitions of theory, is inconsistent and therefore missing from this definition. If this part of the update had been accepted by Rogers, it would have succinctly presented her views on nursing and nursing knowledge.

After the publication of the 1970 book, Rogers identified three theories derived from her nursing science, encouraging others to derive further theories in the belief that the science could generate multiple theories. The theories, accelerating evolution (change), emergence of the paranormal, and manifestations of field patterning, originally named the correlates of evolutionary human development then the correlates of patterning in unitary human beings, were introduced initially through handouts and talks she gave. Although Rogers repeatedly said that evolution was not an appropriate term and change was better, she never officially deleted evolution from the first theory to rename it accelerating change, but she did modify the name of the third theory as noted.

In a 1972 handout Rogers presented the Correlates of Evolutionary Human Development:

- | | | |
|----------------------|-------------|------------------------|
| • Small human field | large | boundaryless |
| • High density | moderate | low |
| • Heaviness | lightness | weightless |
| • Time seems to drag | race | timeless |
| • Long waves | | short |
| • Low frequency | | high |
| • Sleeping | waking | expanded consciousness |
| • Slow rhythms | fast | continuous |
| • Low velocity | | high |
| • Uneasy | pain | agony |
| • Indifferent | pleasure | ecstasy |
| • Practical | imaginative | visionary |
| • Shorter lifespan | | longer |

She offered revised versions that I know of, as shared by Dr. John Phillips who taught at New York University, in 1978, 1979, 1982, 1983, 1985, and 1986 before the final one appeared in 1990 and 1992 as manifestations of field patterning in unitary human beings (human-environment mutual process). She initially headed the left-hand column “From” and the middle column “In the Direction of,” which can be found on the versions through 1982. She then deleted the headings in an effort to avoid suggestions of linearity, again not what she meant. She consistently described the evolution of unitary humans as a non-linear process. “...these are manifestations tied in with the diversity of pattern. What I ‘m really saying is that I would expect pragmatic in the least diverse pattern, with imaginative more diverse, and visionary even more diverse. So it’s really diversity of pattern....” (Rogers cited in Sarter, 1988).

The current version of these manifestations is

- | | | |
|------------------------------|---------------|------------------|
| • Lesser diversity | | greater |
| • Longer rhythms | shorter | seems continuous |
| • Slower motion | faster | seems continuous |
| • Time experienced as slower | faster | timelessness |
| • Pragmatic | imaginative | visionary |
| • Longer sleeping | longer waking | beyond waking |

Rogers always maintained that this list was not an exhaustive one, encouraging others to suggest new manifestations consistent with the science. Rogers’ modifications over the years represented her continuing effort to better reflect her conceptualization of the science of unitary human beings. In 1978 and 1979, for example, one correlate/manifestation was more visibility---less visibility---ethereal; another was heaviness---lightness---weightless. By 1982 she had deleted both. In a 1983 interview Sarter (1988) asked Rogers what she planned to do about concepts such as materiality and ethereality. Rogers responded that

she did not know, the problem was that “people tend to think it’s about mass versus—the other” (p. 130), when she was trying to get at “experienced as” (p. 131). Her efforts to remove such ambiguities resulted in the shorter final version that appears above.

PARALLELS TO LITERATURE FROM OTHER FIELDS

It is always useful to look at Rogerian nursing science within the context of scholarship of its day as well as new ideas emerging in other fields years after Rogers’ passing. Only two exemplars will be presented here, one from the past and one current, to illustrate the resonance of Rogers’ ideas with literature emerging before and during her lifetime and beyond. Rogers’ extensive course bibliographies included *Flatland: A Romance of Many Dimensions* (1952) by Edwin A. Abbott (1838-1926), a scholar with an interest in higher mathematics, which described events that occurred when a three dimensional being appeared to an inhabitant of a two dimensional world. Rogers used it for a variety of purposes, most notably to help students locked in a three dimensional world unable even to conceive of four dimensionality. This must have been an area of fertile speculation because other such books were published. The one I chose to describe here was published in 1922 when Rogers was eight. An avid reader from childhood on in a family that encouraged literary pursuits with family discussion, she may have been introduced to Granville’s (1922) *The Fourth Dimension and the Bible*. I would like to credit Dr. John Phillips, who taught at New York University with Rogers and then taught her graduate course in the science of unitary human beings once she retired, for introducing me to this book. Reading it reminds me of sitting in class with Rogers in 1976 and 1977. I would venture to guess that it is representative of other such books available at the time.

William Anothony Granville was the president of Gettysburg College and a mathematician who invented, among other things, Polar Coordinate Plotting Paper and Granville’s Transparent Combined Ruler/Protractor. Presented here are a few of the ideas expressed in his book that resonate with Rogerian nursing science.

- The term four dimensionality is popularly used to represent the mathematical concept of higher spaces (dimensions).
- Humans’ higher dimensional selves are being projected into a three dimensional world.
- The universe is changing in form and mass in ways three dimensional beings cannot comprehend.
- This raises questions such as,
 - What is illusion versus reality?
 - What is a human being? A higher dimensional being who can only observe and know three dimensional attributes?
- This encourages speculations regarding death and dying....

At death, does the being shake off the limitations of three dimensionality?

“Unlimited vistas of new knowledge would open up to him (sic), and his powers of understanding and possibilities of action would have increased to an extent far beyond the present limits of human conception” (p. 87)

and

- Heaven versus hell....
Do they represent expanded versus constricted perception?
The phrase, many mansions, invites speculations about many dimensions, expanding vistas.
- There are difficulties finding the necessary language....
There are no words or language to adequately convey impressions coming from a space/dimension foreign to us.
We are hampered by restrictions/limitations imposed by lower dimensions.
- Presence is not embodied in space and time, paving the way for what are perceived as miracles

From 1922 we move to 2008 with Stuart A. Kauffman, founding director of the Institute for Biocomplexity and Informatics and professor at the University of Calgary and his book, *Reinventing the Sacred: A New View of Science, Reason, and Religion* (2008). Fourteen years after Rogers' death, Kauffman wrote of the emergence of a new worldview, one that is transformative, creative, and contentious, one that shows life cannot be reduced to or explained by physics and, indeed, is only partly describable by natural laws. Prediction is impossible, as a world of explosive creativity is inherently unpredictable (Kauffman, 2008). “We live our lives forward into mystery” (p. xi) with the task of developing “a global ethic, in a shared space, safe to all of us...” (p. xiii). It was in handouts from the 1970s that Rogers contrasted what she called the older worldview with the newer worldview characteristic of her science and descriptive of such a transformative, creative worldview. Her distinction between the older and newer worldviews was first published in 1986 (Malinski, 1986a).

Many such parallels can be drawn, as Rogers herself did in the 1970 book, and will continue to be drawn as new publications emerge illustrating a worldview shared with Rogerian nursing science. It is important to note, however, that parallels among ideas do not imply they are the same ideas. Differences exist, as well, in the visions of Rogers and any other author cited. For example, Rogers was always clear that, in her view, reality is four dimensional/pandimensional, not that we are evolving from three dimensional reality, which can be seen in Granville's work. “It is not something one moves into or becomes. It is a way of perceiving human beings and their world” (Rogers, 1986, p. 5).

The group most responsible for continuing to expand the science of unitary human beings is the Society of Rogerian Scholars. A brief history of the organization follows.

THE FOUNDING OF THE SOCIETY OF ROGERIAN SCHOLARS

A group of us living in the New York City area were fortunate in our opportunity to meet regularly with Martha Rogers in her Manhattan apartment. We called ourselves the Dreamers' Think Tank and thought about ways to share our experiences with others interested in this science. As we sat discussing this in Martha's living room one day in 1986, the idea for a society to be called the Society of Rogerian Scholars (SRS) was born. We deliberately chose the word "scholars" out of the belief that nurses are scholars, that scholarship exists both inside and outside of academia, in practice, wherever nurses are found.

Part of our preparations included publishing a newsletter; the first issue of *Rogerian Nursing Science News* debuted in June, 1988. SRS was formally incorporated in 1989. The initial Board of Directors consisted of Dr. Elizabeth A. M. Barrett, President, Dr. John R. Phillips, Vice-President, Dr. Therese Connell Meehan, Secretary, Dr. Violet Malinski, Treasurer, and Dr. Martha E. Rogers, Creator of the Science of Unitary Human Beings. The premier issue of SRS's refereed journal, *Visions: The Journal of Rogerian Nursing Science*, was published in 1993. The following year, the Martha E. Rogers Scholars Fund, the 501C3 arm of SRS, was established.

The SRS mission is to advance nursing science through emphasis on Rogerian nursing science with a focus on education, research, and practice in service to humankind (Rogerian Scholars Found Society, 1988). Its purposes are to

- advance nursing as a basic science
- explore the meaning of a philosophy of wholeness
- foster understanding and use of Rogerian nursing science as a basis for theory development, research, education, and practice
- provide avenues for dissemination of the science
- foster a network for communicating the science
- create forums for scholarly debate
- provide educational forums

The SRS philosophy highlights the need for imaginative, creative use of scientific knowledge specific to nursing, nurturance of human beings, and thoughtful synthesis of science and art to fulfill nursing's mandate of service to society (Rogerian Scholars Found Society, 1988). It articulates the need for a global forum where the concepts, theories, and uses of Rogerian nursing science are discussed. Finally, it calls for helping to advance nursing as a science and contribute to the knowledgeable nursing of human beings.

Although the newsletter no longer exists, *Visions: The Journal of Rogerian Nursing Science* continues publication. SRS sponsors annual conferences each fall highlighting current and emerging perspectives in Rogerian nursing science.

FORGING THE PATH FORWARD

A range of information on Rogerian nursing science and pioneering uses in practice, research, and administration can be found in books edited by Malinski (1986b), Barrett (1990a), Madrid and Barrett (1994), Malinski and Barrett (1994), and Madrid (1997), along with numerous book chapters and refereed articles. Especially noteworthy, given the innovativeness of method plus the unfortunate reality of books going out of print, is the Wiki on Rogerian nursing science under the creative stewardship of Howard Butcher (<http://rogeriannursingscience.wikispaces.com>). A range of theories derived from the science of unitary human beings are in various stages of development. See, for example, Alligood and McGuire (2000), Barrett (1983, 1989), Bultemeier (2002), Butcher (2003), Carboni (1995a), Hills and Hanchett (2001), and Reed (2003). Numerous research tools have been developed (Barrett, 1990b; Carboni, 1992; Ference, 1986; Paletta, 1990; Watson, Barrett, Hastings-Tolsma, Johnston, & Gueldner, 1997) along with new research methods (Bultemeier, 1997; Butcher, 1994, 2005; Carboni, 1995b; Cowling, 2001). Barrett (1988, 1989) and Cowling (1990, 1997) pioneered Rogerian practice approaches, with Butcher (2001) synthesizing them into a comprehensive Rogerian practice model. Butcher (1999) conceptualized ethics from the Rogerian perspective, based on concepts such as reverence, human betterment, justice-creating, compassion, and wisdom. Elizabeth Ann Manhart Barrett was recently honored for the body of work she and others using her power theory and tool have produced. "A Celebration of Barrett's Theory of Power" was held in New York City on June 6, 2008, cosponsored by SRS. (Please note that I have chosen only representative examples and a selection of publications from each author cited; the aim is not to provide an exhaustive list.)

Rogersians may be a small group but we are a productive group as well as a growing group. There are fertile areas for ongoing exploration and development of the science of unitary human beings. The science lives and will continue to develop and flourish as long as there are nurses working for the betterment of humankind and our world who are drawn to the vision originally proposed for nursing by Dr. Martha E. Rogers.

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THE THEORY OF POWER AS KNOWING PARTICIPATION IN CHANGE: A LITERATURE REVIEW UPDATE

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ABSTRACT

Since the introduction of Barrett's Theory of Power as Knowing Participation in Change and its instrument in 1983, many nurse scholars have used the theory and the instrument. The first critical review of 15 years of power literature was published in 1998. This article presents a review of this literature since 1983.

KEY WORDS: Barrett's Power Theory, PKPCT, Rogerian Research, Science of Unitary Human Beings

INTRODUCTION

Dr. Elizabeth Barrett developed a nursing theory of power from a perspective of the Science of Unitary Human Beings. By linking Martha Rogers' homeodynamic principles of change and the postulate of knowing participation in change, Barrett (1983) identified power as one way that human beings participate in patterning their potentials toward well-being. Using the four dimensions of the power theory: awareness, choices, freedom to act intentionally and involvement in creating change, Barrett defined knowing participation as "being aware of what one is choosing to do, feeling free to do it, and doing it intentionally" (Barrett, 1986, p. 175). Since the introduction of Barrett's Theory of Power as Knowing Participation in Change and its instrument in 1983, many nurse scholars have used the theory and the instrument. The first critical review of 15 years of power literature was published in 1998 (Caroselli & Barrett, 1998). Since 1998, more literature has been published; this article presents an updated review of literature since that time.

METHODS

The literature used in this review is from two sources: (a) use of a survey questionnaire and (b) literature search. Using the same survey questionnaire used in the earlier study (Caroselli & Barrett, 1998), questionnaires were sent out to 96 individuals who had requested permission from Dr. Barrett to use Power as Knowing Participation in Change Test (PKPCT). Initial questionnaires were mailed in October 2004, and the last questionnaire received was in April 2005. Both mail and e-mail were used to receive responses. When an individual did not respond to the first questionnaire, a follow-up letter and questionnaire were sent out as well as follow-up phone calls were made if a phone number was available.

Sixteen survey questionnaires were returned undelivered due to a change of address or lack of a forwarding address. Of the 80 surveys potentially delivered, 40 responded (50 % response rate). Of the 40 responses, 28 individuals responded by actually returning the survey questionnaire. The remaining twelve individuals responded either via e-mail, letter or phone message, without actually returning the survey tool. Of the 40 non-responses, a literature found that an additional 10 subjects had utilized the tool thus making a total of 50 responses. Of the 50 responses, fourteen people indicated they did not use the tool. The following is a breakdown of remaining 36 responses where the PKPCT was used in total or in part: fifteen doctoral dissertations; five master's theses; seven researchers not associated with a degree program; and six uses for other purposes (i.e., inclusion in a textbook, research class, program evaluation). No specific data were available from the three completed master's theses.

The power literature reviewed here includes 27 studies identified from the initial study (Caroselli & Barrett, 1998). An additional 18 studies were identified through searches in the literature via electronic databases such as CINHAI and DAI. Key words used were *Barrett's power, knowing participation and change*. This resulted in additional literature not reported in the previous review. Dr. Barrett forwarded a copy of a master's thesis completed in April 2009 which was included in the review as well. As such, a total of 46 studies which include 37 major studies and 9 minor studies are reviewed in this article. Doctoral dissertations and postdoctoral studies were considered as the major studies. Research studies undertaken during doctoral and master's education were identified as the minor studies.

FINDINGS

Table 1 and 2 provide a summary of 37 major studies and 9 minor studies, respectively. Categories include design and methods, population and sample, concepts/interventions reliability, and major findings.

DESIGN AND METHODS

Except for one qualitative (Jones & Oliver, 2007) and two with mixed research designs (Hammond, 2002; Lewandowski, 2004) used in the major studies, a quantitative research design was used in all 34 major studies and all of the nine minor studies. Of the 36 major studies that used quantitative research designs, 20 studies used non-experimental research designs and 16 studies used experimental designs. Methods used in the 20 non-experimental research designs include 19 descriptive, correlational designs, and one descriptive comparative design. Methods used in the 16 experimental research designs include seven experimental designs and nine quasi-experimental designs. Of the nine minor studies, a descriptive, correlational design was used in eight studies, and a quasi-experimental design was used in only one study. Rogers' Science of Unitary Human Beings was used as a theoretical framework in 26 major studies and six minor studies (70%). Barrett's power theory was used in one quantitative study (Preston, 1997), one qualitative study (Jones & Oliver, 2007), and as one of three theories in another quantitative study (Lunney et al., 2004). Information

regarding the specific theoretical framework used was not available from the remaining 11 studies.

Population and Sample

The population and sample used included adults, ages 18 through 101. Adult women and men who were generally healthy were used in 10 major studies (Dzurec, Hoover & Fields, 2002; Hills, 1999; Jones & Oliver, 2007; Kim, Park & Kim, 2008; Kim et al., 2008; Mahoney, 2001; Preston, 1997; Smith, 2001; Wang, 2004; Wright, 2004) and in two minor studies (Narcisi, 2004; Nelson, 2001). Sixteen major studies (Ackerman, 2008; Echols-Hurst, 2000; Epstein et al., 2004; Farren, 2008; Hammond, 2002; Larkin, 2007; Lewandowski, 2004; Kim, 2001; Salerno, 2002; Shearer, 2004; Shearer, Cisar & Greenberg, 2007; Siedlecki & Good, 2006; Smith, Arnstein & Wells-Federman, 2002; Smith & Broida, 2007; Wall, 2000; Wijesinghe, 2008) and two minor studies (Pusateri, 1998; Varela, 1994) focused on adults with health conditions. Six major studies (Evans, 1990; Hurley, 2005; Lunney et al., 2004; Mahoney, 1999; McGarvey, 2003; Talley, 1998) and four minor studies (Baldini, 1997; Ciarcia, 1998; Heagele & Whetzel, 2009; Young, 1997) focused on nurses, while five major studies (de Mattos Pimenta et al., 2006; Falk-Rafael et al., 2004; Garrett, 1999; Massari-Novak, 2004; Smith, 2000) and one minor study (McBride, 2003) focused on nursing students. Sample sizes for major studies ranged from 40 to 881 in descriptive, correlational studies; from 12 to 97 in experimental studies; 12 to 102 in quasi-experimental studies; from 42 to 70 in triangulated studies; and 43 in the qualitative study. Sample sizes for minor studies ranged from 10 to 90 in descriptive, correlational studies, and 284 in a quasi-experimental study.

Concepts/Interventions

In addition to the concept of power more than 40 concepts/variables and 10 different interventions were studied. Pain was the most frequently studied concept which was studied in seven studies (Kim, 2001; Lewandowski, 2004; Siedlecki & Good, 2006; Smith, 2001; Smith, Arnstein & Wells-Federman, 2002; Smith & Broida, 2007; Wijesinghe, 2008). Therapeutic touch as an intervention was found in 4 studies (Smith, 2000; Smith, 2001; Smith, Arnstein & Wells-Federman, 2002; Smith & Broida, 2007). Other interventions studied were exercise (Ackerman, 2008; Wall, 2000), meditation (Kim, Park & Kim, 2008; Wijesinghe, 2008), computer based terms (Lunney et al., 2004), empowerment (Shearer, Cisar & Greenberg, 2007), feminist pedagogy (Falk-Rafael et al., 2004), imagery (Epstein et al., 2004; Lewandowski, 2004), magnetic field therapy (Kim, 2001), music (Siedlecki & Good, 2006), and a support group (Larkin, 2007). Hills (1999) used only the awareness dimension of the power instrument.

Reliability Data

Reliability information is available from 27 major studies and from one minor study. Internal consistency reliability estimation of PKPCT by Cronbach's alpha for the total scale ranged from .93 to .99. However, exceptions to .93 to .99 alpha range included Shearer and colleagues (2007) reporting Cronbach's alpha of .72 in their study with women and men with heart failure and Wijesinghe

(2008) reporting reliability of .52 (pretest) and .63 (posttest) in his study with nursing home residents with chronic pain. Cronbach's alpha means for each subscale were: .87 for Awareness; .88 for Choices; .90 for Freedom to Act Intentionally and; .92 for Involvement in Creating Changes.

Major Study Findings

In the major studies, power was significantly and positively correlated to empathy (Evans, 1990), job satisfaction (Evans, 1990; Hurley, 2005; Mahoney, 1999), decision making (Talley, 1998), organizational commitment (Talley, 1998), self-esteem (Garrett, 1999), professionally inviting teaching behaviors (Garrett, 1999), overall satisfaction with previous health care experience (Echols-Hurst, 2000), satisfaction with current health care encounters (Echols-Hurst, 2000), spirituality (Hammond, 2002; Smith, 2000; Smith & Broida, 2007), hope (Wall, 2000), perception of self (Salerno, 2002), choosing the best practice response (McGarvey, 2003), transformational leadership (Massari-Novak, 2004), social support (Shearer, 2004), trust (Wright, 2004), stress (Hurley, 2005), positions on nursing diagnosis (de Mattos Pimenta et al., 2006), satisfaction with career option (de Mattos Pimenta et al., 2006), diversity (Smith & Broida, 2007), quality of life (Ackerman, 2008; Farren, 2008), self-transcendence (Farren, 2008), and well-being (Kim, Park & Kim, 2008; Kim et al., 2008). Power was significantly and negatively correlated to depression (Dzurec, Hoover & Fields, 2002), and severity of alcohol dependence (Hammond, 2002). The awareness dimension of power was significantly and positively correlated to duration of breast-feeding, human field motion, higher spiritual involvement and longer hours of sleeping (Hills, 1999).

For nursing interventions power was increased through therapeutic touch (Smith, 2000; Smith, Arnstein & Wells-Federman, 2002), exercise (Ackerman, 2008; Wall, 2000), feminist pedagogy (Falk-Rafael et al., 2004), computer-based terms (Lunney et al., 2004), imagery (Epstein et al., 2004), music (Siedlecki & Good, 2006), support group (Larkin, 2007), and meditation (Kim, Park & Kim, 2008; Wijesinghe, 2008). In minor studies power was positively correlated to advance directives (Varela, 1994), age (Young, 1997), number of hours employed per week (Young, 1997), level of clinical experience (Ciarcia, 1998), and perceived healthiness (Nelson, 2001). Lastly, power was positively correlated to level of education in one study (Ciarcia, 1998), but negatively correlated in another (Young, 1997).

DISCUSSION

Power versus empowerment

Several researchers used the PKPCT to measure concepts other than power. Echols-Hurst (2000) used PKPCT to measure empowerment in men and women with psychiatric and substance abuse. Falk-Rafael and colleagues (2004) used PKPCT to measure empowerment of nursing students before and after providing feminist pedagogy. Similarly, Shearer (2004) used PKPCT to measure health empowerment in women receiving health care. In their study of telephone-delivered empowerment intervention for women and men with heart

failure, Shearer and colleagues (2007) used the PKPCT to measure the concept of purposeful participation. In a minor study, Pusateri (1998) used the PKPCT to measure empowerment in adults with noninsulin dependent diabetes.

Barrett (Barrett, Caroselli, Smith & Smith, 1997) differentiates three contrasting views of power. The traditional social science views of power are more oppressive, since power must be taken while in contrast the newer feminist views of empowerment through power sharing while liberating may also be oppressive, since others may decide the liberation. In the Rogerian view of power as the capacity to participate knowingly in the nature of change, each person has access to his own power which can be enhanced. While the concept of change is the same, causality differentiates among these three forms of power. Both the traditional and feminist views of power are causal in nature; the Rogerian view of power is acausal in nature. Further, Barrett (Barrett, Caroselli, Smith & Smith, 1997) noted that these three views “do not exist on a continuum” (p. 34), suggesting that empowerment and power are different constructs.

Reliability

Internal consistency reliability values by Cronbach's alpha remain high and comparable to the previous review (Caroselli & Barrett, 1998). Cronbach's alpha for the total PKPCT range of .93 to .99 in this review is comparable to range of .90 to .99 in the previous review. Similarly, Cronbach's alpha ranges for each subscale are comparable to the previous review. Cronbach's alpha ranges for the present review and for the previous review, respectively, were: .81 to .97 vs. .59 to .92 for Awareness; .58 to .96 vs. .75 to .92 for Choices; .79 to .97 vs. .71 to .95 for Freedom to Act Intentionally and; .86 to .98 vs. .57 to .99 for Involvement in Creating Changes. The Cronbach's alpha for the total PKPCT of .72 reported by Shearer and colleagues (2007), and .52 (pretest) and .63 (posttest) reported by Wijesinghe (2008) are the only two exceptions. While coefficient alpha of .72 is higher than .70 and can be considered satisfactory (Polit & Beck, 2010), this value is exceptionally low compared to the rest of reported values. Shearer and colleagues (2007) reported that some patients had difficulty understanding the directions to the PKPCT, hence completing the semantic differential scale contributing to the missing data from baseline (N = 84) to postintervention (N = 61). The educational level of the participants might have related to this difficulty, since 5 (6.3%) of 79 participants had only grade school education. Similarly, Wijesinghe (2008) reported several problems related to the use of PKPCT with his study sample of nursing home residents. While all the participants in his study had a formal education of high school or greater, which is what Barrett suggests, many participants had considerable difficulty comprehending the meaning of certain word pairs such as “constrained,” “assertive,” “expanding,” and “timid” (p. 116).

Cronbach's coefficient alpha is the most important outcome as it provides actual estimation of reliability. As such, the coefficient alpha should be computed each time a test is employed (Nunnally & Bernstein, 1994; Waltz, Strickland & Lenz, 1991). While almost all reliability values were reported in Cronbach's alpha

values, researchers were not consistent in reporting reliability data in their reports. Some researchers did not report any reliability information; some reported reliability of the total PKPCT scale only; some reported reliability of the subscales only; some reported reliability ranges of the subscales, rather than the specific reliability value of each subscale; and some reported reliabilities of both the subscales as well as the total PKP CT scale. Epstein and colleagues (2004) reported reliability ranges of all the instruments used in the study. When an entire scale is composed of two or more subscales (this is the case with PKPCT), alpha values can be inflated when computed for the entire scale. In such a case, Waltz and colleagues (1991) recommend computation of coefficient alpha for each subscale in addition to the test as a whole.

Dzurec and colleagues (2002) computed PKPCT subscale reliabilities only. Their reason for not computing coefficient alpha for the entire scale was that the total number of PKPCT items (48) exceeded the number of participants (40) in their study. The critical factor in alpha reliability testing appears to be the total test variance, rather than the sample size (Blackwood, 1955; Waltz, Strickland & Lenz, 1991). In other words, the more important issue is the sampling technique employed rather than the sample size. Blackwood (1955) recommends providing detailed descriptions of the adequacy of the sampling procedures used in the study, so that judgment about whether the sample represents the population can be made. The reliability of observations in a small sample may be increased by controlling variance associated with individual differences (Blackwood, 1955).

Strengths, Weaknesses and Suggestions

Strengths of the PKPCT described by survey participants included: strong evidence of validity (n=9) and reliability (n=9); strong basis in the power theory (n=8); ease in usage (n=4); ongoing work with the tool (n=2); and no response bias (n=1). Weaknesses of the PKPCT included: terms were too complex or abstract (n=10); high school completion educational requirement (n=8); difficulty in understanding how to complete semantic differential scale (n=4); and limited use in individuals aged over 60 (n=1). Suggestions or comments included: streamline or update the tool with user friendly terms and for wider educational ranges (n=5); tool is not available in Spanish or in Chinese or for children (n=2); and that using the tool itself was thought to be “therapeutic” (n=1).

It is noteworthy that this review includes additional international perspectives from Brazil (de Mattos Pimenta et al., 2006), Korea (Kim, Park & Kim, 2008; Kim et al., 2008) and Taiwan (Wang, 2004). The major limitation of this review is that some of the information provided in this review was based on an abstract which includes three doctoral dissertations (Hills, 1999; McGarvey, 2003; Preston, 1997).

SUMMARY

A growing number of researchers have used Barrett’s power theory and/or instrument in their scholarly work. While a majority of studies reviewed utilized descriptive correlational design with a population of generally well individuals, the

number of experimental studies with a population requiring health care needs has increased dramatically. A vast majority of researchers used Rogers' Science of Unitary Human Beings as their conceptual framework. In many of the major studies power was significantly and positively related to empathy, job satisfaction, decision making, organizational commitment, self-esteem, professionally inviting teaching behaviors, overall satisfaction with previous health care experience, satisfaction with current health care encounter, spirituality, hope, perception of self, choosing the best practice response, transformational leadership, social support, trust, stress, positions on nursing diagnosis, satisfaction with career option, diversity, quality of life, self-transcendence, and well-being. Power was significantly and negatively related to depression and severity of alcohol dependence. Therapeutic touch, exercise, feminist pedagogy, computer-based terms, music, support group, and meditation interventions increased power significantly.

Reliability of the tool continues to remain high when used in adult populations with a high school education or above. Major strengths of the PKPCT included a strong theoretical basis, validity and reliability. Weaknesses of the tool included abstract terms used and educational requirements. It is suggested that researchers report alpha reliability data for both the four subscales as well as the total PKPCT in their future studies. The PKPCT is translated to Finnish, Japanese, Korean, Portuguese and Swedish. This review did include three international perspectives: Brazil, Korea and Taiwan. With the new instructions for completing the PKPCT based on research introduced in 2001 (Barrett et al, 2001) and a pictorial version is in the process of pilot testing (Personal communication with Dr. Malinski, June 6, 2008), the work with the PKPCT is ongoing. Continued use of the instruments will promote the Science of Unitary Human Beings.