A Holistic Approach to Research

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Abstract

There are a number and variety of research models from which to choose when examining phenomena relevant to nursing and health. Each model reflects the underlying ontological and epistemological foundations. A purely qualitative or quantitative model does not adequately reflect a holistic view. Research models examining holistic phenomena should be congruent with holistic nursing theory. Epistemological triangulation helps ensure research grounded in a holistic epistemology. A hermeneutical approach to research design and interpretation provides a holistic framework for study. The resulting overall design should be both methodologically rigorous and congruent with holistic philosophy.

Key Words: Holistic Research, Methodology, Mixed methods, Epistemology

Introduction

There exists a complex variety of competing research models and paradigms. It is not always clear which method, paradigm, or guiding philosophy is appropriate to a field of inquiry or a phenomenon under consideration. This is especially true for a holistic approach from a health care perspective. The most empirically rigorous methods are quantitative, but lack many elements sufficient to illustrate human experience. Qualitative methodologies tend to be the most popular for holistic research because they are more suitable for studying lived experience. This paper will argue for a method of choosing a research model appropriate for holistic nursing inquiry.

Methodologies and Paradigms

The philosophical foundations underlying each of the methodologies represent different perceived realities and offer different, complementary views of the same phenomena (Sale, Lohfeld, & Brazil, 2002). All views are relevant. Each methodological paradigm has its associated philosophical foundations. Part of this philosophical underpinning is ontological, dealing with the fundamental nature of reality. The other primary philosophical aspect is epistemological, concerning the nature and justifications of truth and knowledge (Tashakkori & Teddlie, 1998).
Quantitative Paradigm

Quantitative models are based on a positivist empirical philosophy (Newman & Benz, 1998). Positivism requires facts be verified by empirical observations, and only allows statements conforming to this requirement (Ayer, 1952). This principle of verifiability is an implicit rejection of any subjective source for knowledge.

The underlying ontology of the quantitative paradigm consists of a single, objective reality independent of any observer within it (Tashakkori & Teddlie, 1998). Rudolph Carnap describes a positivist ontology in which reality is reduced to units called elementary experiences (Gross, 1970).

This single objective ontology is the theoretical foundation allowing for a reductionist, atomist approach, where every meaningful constituent of being is theoretically reducible to a single perspective.

Positivist epistemology is based on the principle where all statements must be empirically verifiable (Ayer, 1952). Phenomena must be reduced to the smallest constituent parts which provide empirical indicators (Sale, Lohfeld, & Brazil, 2002). This reductionism, reducing phenomena to explain things from a single perspective began in medicine and nursing with René Descartes (17th century). Descartes, the father of modern philosophy, was looking to construct a secure system of knowledge supported by certainty. He postulated that true knowledge must come from true reason alone, as the senses could not be trusted. His strictly rational and systematic model of thought proposes to never accept anything except clear and distinct ideas. This can be limiting when explaining human experience such as trauma and pain. Descartes was influenced by Aristotle’s strictly logical approach to scientific investigation of natural phenomena. Natural science extracts quantitative data to reveal pure cause and effect relationships, and is adopted by physical sciences such as chemistry, biology, physics, and medicine. The standard model of hypothesis testing, derived from Karl Popper’s notion of falsifiability, is a positivist model logically reversed (Hamlyn, 1970).

A proposition, to be falsifiable, must be constructed in such a way where it can, at least in theory, be empirically disproved. Statements not logically contradicted by hypothetical empirical data cannot be tested. In the more radical forms of positivism such as Ayer’s (1952), all propositions which cannot be positively, empirically tested are considered meaningless.

Quantitative methodologies reflect these underlying principles. Quantitative surveys and experiments evince rigidly controlled variables, standard instrumentation, and statistical analysis of falsifiable hypotheses (Creswell, 2003). The positivist framework is robust to questions of reliability due to the rigid requirements for verification and analysis, but the narrowness of focus limits its validity in describing the human condition. No amount of quantitative data collection and analysis can provide a meaningful description or explanation of the lived experience (Creswell, 1998).

Qualitative Paradigm

Qualitative inquiry is based on constructivist philosophical assumptions grounded in the subjective point of view (Creswell, 1998; Sale, Lohfeld, & Brazil, 2002; Tashakkori & Teddlie, 1998). Every individual, including the researcher and the participant, is a co-creator of their own reality. Describing these perceived realities should be the aim of this research. Constructivism is interpretive, subjective, and recognizes many truths in contrast to the positivist belief in one objective truth.
There is no separation or reduction of the observer and the observed in a qualitative epistemology (Tashakkori & Teddlie, 1998). A significant intersubjective element is therefore inherent in qualitative research. No single objective ground exists for interpretation of facts derived from subjective experience. Observer and observed are each subjects in themselves, which is reflected in the amount of interpersonal involvement in approaches such as grounded theory and ethnography (Creswell, 1998; Maggs-Rapport, 2001).

Qualitative methodologies reflect the need to report subjective and intersubjective aspects of phenomena (Maggs-Rapport, 2001). Creswell (1998) categorizes qualitative methods into biographical, phenomenological, grounded theory, ethnographic, and case study traditions. Phenomenological methods generally follow either Husserlian descriptive phenomenology or Heideggerian hermeneutic (interpretive) phenomenology. Husserl (1973) viewed phenomenology as a reduction to pure conscious experience; therefore, the Husserlian version of phenomenology is restricted to a description of phenomena as they are given to consciousness. Heidegger, in contrast, viewed phenomena as irreducible, gestalt, beyond the subject plus the world (Heidegger, 1962). Heideggerian phenomenology therefore requires an interpretive element, reducing credibility for quantitative methodologists.

**Mixed Methodology**

**Pragmatism**

Most mixed-method approaches, if they can be said to adhere to any single philosophy, reflect the pragmatism of American philosopher John Dewey. Dewey’s ontology defines reality not as a collection of substances, but a series of ordered events (Field, 2001). This places the fundamental ground for being in the subjective, lived element of experience. Dewey’s naturalist epistemology rejects reductionist approaches. This pragmatic theory of truth rejects the traditional correspondence theory (i.e., truth is what corresponds to objective reality), and instead bases the truth standard on utility for problem solving (Field, 2001). Concepts useful for solving real world human problems qualify as truths. The truth is whatever works best.

Standard pragmatic research models utilize quantitative, qualitative, or mixed methods to search for a pragmatic truth based on what works best (Sale, Lohfeld, & Brazil, 2002). Mixed-method approaches are particularly suited for exploratory research where a variety of viewpoints are most valuable (Borkan, 2004). Issues of ultimate philosophical grounding are not necessarily addressed. Paradigms are considered ontologically and epistemologically independent and are chosen according to the needs of the moment (Caracelli & Greene, 1997).

**Paradigm Wars**

The distinction between truth definitions of the quantitative and qualitative paradigms is a prime reason many consider them incompatible (Sale, Lohfeld & Brazil, 2002). This attitude is rooted in the polarization of research communities. It is typically reflected in the manner in which research methods are taught (Tashakkori & Teddlie, 2003). Combined methods generally manifest a hierarchy of methodology dominated by quantitative methods and analysis.

Borkan (2004) notes several possible barriers to the integration of paradigms. Any new idea threatens the entrenched thought patterns and leads to turf wars as change is resisted. This extends to the audiences of the research as well; those who read
quantitative research do not typically read qualitative research. Theoretical barriers may exist for primary theories that do not acknowledge the truth value of other theories (Borkan, 2004). This dichotomy reflects a reductionist approach requiring one paradigm to be fundamental for ideological purposes. This assumption is known as the incompatibility thesis (Tashakkori & Teddlie, 2003). A holistic approach to the problem is in fundamental disagreement with the incompatibility thesis. The incompatibility view hinders comprehensive holistic understanding by ignoring valid viewpoints (Goding & Edwards, 2002).

**Holism**

The central philosophic assumption of holism is the whole is greater than the sum of its parts. There are interrelationships and other aspects of reality not apparent in the qualities of the individual parts. The parts of a system can only be understood in terms of the entire system. Holistic theory guiding the nursing profession extends this basic non-reductionist philosophy into the health care system. An example of holistic nursing theory is Rosemarie Rizzo Parse’s Theory of Human Becoming.

**Holistic Ontology**

The primary ontological assumption of Parse’s theory is human beings co-exist with the world as a unitary phenomenon (Parse, 1998). Two other aspects of the theory are particularly important to the philosophical grounding. The intersubjective practitioner-patient relationship, which Parse calls *true presence*, is central to the theory and logically extends to the researcher-participant dialectic (Parse, 1998). Health is defined strictly from the patient’s perspective, placing the epistemological ground squarely in the subjective element of experience (Parse, 1998). Parse’s definition of health is representative of general holistic perspectives on health care (McDowell, Spasoff, & Kristjansson, 2004).

A holistic approach is appropriate for the complex interactions involved in health care (Goding & Edwards, 2002). Parse follows the Heideggerian model of ontology whereby the individual and the world are interdependent and not reducible to purely objective elements (1995). This follows the general holistic view of reality not as separate realms of the physical, mental, and spiritual, but a unified whole of interdependent parts (Shealey, 2003). Heidegger explains the fundamental mode of our being as irreducible from the world, which makes it impossible to adopt a perspective that attains a purely objective understanding of the world or ourselves apart from it (Johnson, 2000). Heidegger (1962) adopted phenomenology as the method of inquiry for his analysis of being. Phenomenology is also the default approach to holistic inquiry (Paley, 1998).

**Phenomenology**

The epistemological basis for phenomenology is purely subjective, reduced to the phenomena as they present themselves to consciousness (Honderich, 1995). The fundamental grounding for knowledge is in the conscious lived experience of the individual (Merleau-Ponty, 1958). Reduction to pure experience is achieved by *bracketing*, consciously disregarding all constituents of experience other than the immediate phenomena present in consciousness (Husserl, 1973).

Heidegger disagreed with Husserl regarding one important aspect of phenomenological reduction. Heidegger (1962) did not think it possible to truly bracket out the subjective elements of experience, but instead argued the subject exists in an in-the-world mode that is fundamentally irreducible. Paley
(1998) shares the view where phenomenology is just as reductionist as positivism if it reduces phenomena to only the subjective. Paley further argues the self-reporting nature of phenomenological approach is inherently weak, since it rests on the assumption of a faithful, accurate reflection and recounting.

Dahlberg and Halling (2001) argue for an open approach to phenomenological research in order to preserve objectivity. This openness includes familiarity with oneself and the research, as well as open-mindedness and open relationships with colleagues. Openness should result in a more good faith rendering of the research.

A Holistic Epistemology
Thought in this field is evolving. Positivist epistemology categorically denies the legitimacy of subjective and intersubjective forms of knowledge (Russell, 1959). Quine (1961) suggests a less stringent form of empiricism, allowing broader conceptual schemes than radical reductionism. Quine considers the existence of abstract concepts and matters of experiential fact to differ only in degree, not in kind. This scheme allows for broader arena of questioning, but is still restricted to a positivist justification of knowledge.

There is an ideological reason suggesting subjective and intersubjective elements are not reducible to the objective in the holistic view. A cornerstone of holistic ethics is to never treat the other as an object. The metaphysical root of this mode of relations is Buber’s dialogical concept of the I-Thou relationship. Buber (1970) argues for a fundamental relationship to others and the world as more of an I-Thou encounter than a mere I-It objective experience. Objectifying the other in a research model would violate this ethical principle. Subjective and intersubjective elements must therefore be acknowledged.

Davidson (2001) outlines a holistic epistemology based on interdependent subjective, intersubjective, and objective elements. None of the three varieties of empirical knowledge are reducible to any combination of the others. The argument begins by asserting belief is a necessary condition for knowledge. Knowledge only has meaning against a background of truth and falsehood. Belief about the world requires a working concept of objective truth. The source of the concept of objective truth is communication. Davidson is further in agreement with Wittgenstein (1958); there are no private languages. Intersubjective relationships are required for any communication.

Davidson’s chain of reasoning shows multiple interdependencies between the three varieties of knowledge (objective, subjective, and intersubjective). If all objective knowledge requires intersubjective communication, then the intersubjective cannot be reduced to the objective. If knowledge of the self beyond the sensory level requires communication, then the intersubjective cannot be reduced to the subjective. The intersubjective element is primary to both the objective and subjective aspects of human knowledge. A concept of objective truth is primary to subjective and intersubjective knowledge. The apparent paradox of multiple primary grounds illustrates the impossibility of reducing the epistemological model beyond the three varieties, objective, subjective, and intersubjective. All are relevant.

For example, I need no recourse to the objective world or to other subjects to know the contents of my own mind. This appears to be a subjective grounding. However, as a purely internal matter, I am limited to sensory information, which is not knowledge. Any truth is filtered through my
perceptions. To conceptualize these feelings into a form of knowledge, I must use language. Language requires intersubjective activity. I can not get to the intersubjective without first having subjects with whom to interact. The existence of another subject ‘outside’ of my mind requires there to be an objective world. Instead of considering this example as an impossible paradox, it is more useful to view the complexity as coevolved and interdependent. Davidson’s interdependent approach to knowledge is congruent with the holistic ontological concept of a unitary, non-reducible reality. A truly holistic research design must address the interdependent concerns of the objective, the subjective, and the intersubjective, all inherent in the holistic philosophy.

A Holistic-Pragmatic Approach
A strictly quantitative or qualitative approach is not congruent with holistic philosophy simply because a reduction to one or the other is incomplete (Morse & Chung, 2003). For example, in nursing, the lived experience of the cardiac patient is relevant to approaches to treatment, but the quantitative measurements of blood parameters such as oxygen levels and cardiac enzymes are still relevant, never ignored. One approach does not provide the entire picture; all data is relevant. A mixed-method approach is required to integrate and understand phenomena in a holistic manner (Colley & Diment, 2001). This does not imply monomethods are not valid, just that they are not the final word on a particular subject. A framework for holistic research should ensure the proper categories of questions are asked, whether or not a particular model seeks to answer them all. A body of knowledge is not complete until all of the epistemological bases are covered.

Questions for the Holistic Paradigm in Research
The holistic paradigm must address the subjective, intersubjective, and objective elements for a complete view of a subject, as does the practice of nursing. Phenomenological research based exclusively on lived experience, for example, does not say anything general about the objective correlates of experience. Research focused exclusively on objective measures does not address the subjective experiential elements. The central importance of interpersonal relationships to holistic theory means the intersubjective element also must be considered.

The particular research method chosen should provide the best fit for the epistemological necessities. This comprehensive epistemological requirement can be approached with a form of conceptual triangulation as described by Denzin (Morse & Chung, 2003; Tashakkori & Teddlie, 1998). Triangulation combines multiple perspectives to generate a more complete picture of the phenomenon under study than is possible with any single perspective. Denzin’s three forms of triangulation are theory triangulation, where multiple theoretical perspectives are used; investigator triangulation, which uses multiple researchers; and data triangulation, which uses multiple sources (Tashakkori & Teddlie, 1998). Multiple perspectives are inherently valuable and often lead to new insights (Borkan, 2004). This is not necessarily an organic or interdependent view of the different perspectives, but rather a complementary view (Sale, Lohfeld, & Brazil, 2002).

Interpretation and Discussion
The ontological and epistemological foundations of holism allow for multiple interpretations (Colley & Diment, 2001; Hein & Austin, 2001). A hermeneutic or interpretive phenomenological approach is therefore indicated to control for the subjective
nature of qualitative reporting (Maggs-Rapport, 2001).

Philosophical hermeneutics is a method of interpretation seeking to provide a comprehensive understanding of human experience which accounts for personal, interpersonal, and societal aspects (Gadamer, 1976). Gadamer's hermeneutics is based on the phenomenology of Heidegger, with an added emphasis on awareness of one's own preconceptions and potential biases (Mak & Elwyn, 2003). Hermeneutics initially referred only to interpretation of texts, but was extended into the interpretation of human actions (Wiklund, Lindholm, & Lindström, 2002).

Hermeneutical methods typically are variations on Gadamer's hermeneutical reflection, called the hermeneutical circle (Reedy, 1998). Hermeneutical reflection begins with the researcher's preconceptions and foreknowledge toward the phenomena under study. Once the phenomena have been analyzed, the researcher integrates the phenomena, modifying the original understanding. A return to the phenomena based on a new understanding may yield further refined results (Gadamer, 1976). A properly applied hermeneutical approach has the effect of mitigating researcher bias (Reedy, 1998). Hermeneutics should provide a meta-method for holistic research, to be applied in both the design and interpretation of the study.

A Holistic Model for Nursing Research
A holistic, mixed method strategy should be chosen based on its applicability to the study. Tashakkori and Teddlie (1998) outline three dimensions for analyzing study needs. The first dimension is the investigation type. Is the goal of the study to explore new ideas or to confirm existing research? The second dimension is the data type. Are the data quantitative or qualitative in nature? The third dimension is data analysis. Is the analysis to be qualitative or statistical in nature? Creswell's criteria for complex studies include the sequence of data collection, the priority of mixed data, the integration of mixed data, and the overall theoretical perspective (1998). For example, research on the lived experience of a treatment protocol will place a priority on qualitative data, with quantitative data in a supporting role.

A triangulation approach should be used to define the specific research criteria before selecting a model (Tashakkori & Teddlie, 1998). This step will provide for a stronger justification of the resulting research design as a rationale emerges from the analysis (Creswell, Fetters, & Ivankova, 2004). Analysis of the triangulation should also answer questions of paradigmatic priority – whether it is primarily a qualitative or quantitative question to be answered (Sale, Lohfeld, & Brazil, 2002; Creswell, Fetters, & Ivankova, 2004). A hermeneutical approach to triangulation in the design phase will be an iterative process. As a model design emerges from the analysis, each part of the model should be re-assessed in light of the new whole.

An epistemological analysis should be used to guide holistic research. Consider, for example, a study to explore the lived experience of cancer treatment within a holistic nursing framework. The phenomenological, subjective viewpoint is the primary perspective by definition. Epistemological triangulation of the question suggests objective and intersubjective correlates should be added to the subjective element to complete the epistemological picture. Objective correlates to the treatment experience could include physiological measurements coinciding with pre- and post-treatment conditions. Accounting for the
Intersubjective—element of practitioner-patient interactions finishes the triangulation.

Triangulation of central research question dictates elements of the model design. Data collection sequences for the example are determined by the required timing of pre- and post-treatment measurements. Integration of the data will follow a hermeneutical—cycle, with re-assessment of individual data followed by re-integration as required. The overall model is holistic in both design and process.

A review of extant research models has shown a variety of tools available for the holistic researcher. An analysis of the requirements of holistic inquiry has shown a method for choosing a research model, based on a holistic framework. Triangulation of the data collected is necessary to ensure each epistemological aspect of the question is covered. Continual reflection and integration of research activities will ensure each phase of the research is understood in proper relation to the whole. A nursing research model based on the systematic application of holistic principles will provide a high standard of rigor and thoroughness.

References


