**Research Methodology In Nursing**

**Introduction**

In today’s world nurses must become lifelong learners, capable of reflecting on evaluating & modifying their clinical practice based on new knowledge, expected to become producers of new knowledge through nursing research. Nursing is an important profession in the health care sector that focused on care of individual, families and communities so they may attain, maintain or recover optimal health and quality of life.(**1)** Research in nursing science is the sine of innovation, invention leading to development in nursing science. This is a systemic inquiry to answer questions or problems encountered in the field of nursing practices by providing evidence based knowledge, solution that help nurses to make sound clinical decision that would be cost effective and result in positive outcome to the patient. In the nursing care practices, the real phenomena, i.e. the morbid conditions, the disease progression, behave differently in different setting. The manifestation and amelioration of such phenomena need careful studies with well-designed research approach. Therefore, nurses are required to be well versed in research techniques and practices.**(2)** In order to induct Evidence Based Practice into nursing curriculum, there is a need to fostering critical thinking skills into a nursing curriculum at the under-graduate and post graduate level. Both competences- EBP & critical thinking are reported to be of paramount importance among the knowledge, skills, and processes needed**.(3) (4)** This will facilitate the nurses for clinical decision making, thinking beyond routines and protocols. In this backdrop this article delve into the research approach, philosophy, ethics, conceptualizing, validity and reliability of research in the field of nursing sciences.

**Philosophy of Research in nursing**

“The philosophy of practice and research in any field of science is basically guided by the philosophy of the subject. Nursing philosophy can give a direction for nurse’s practice, education, research and scholastic work. Research philosophical paradigm are sets of beliefs and practices that regulate inquiry within a discipline by providing lenses, frames and processes through which study is carried out (Steven & Edwards, 2008).**(5)** The key

components of philosophy of nursing include “ontology” and “epistemology”. Ontology deals with nature of reality; whereas, epistemology is the philosophy of knowledge or how we come to know the reality (Gortner, 1993).**(6)** The philosophy in nursing sciences guides the research questions, problems, hypotheses, plan how problem can be investigated, select research design as well as identify what methods are used and how data are collected, analyzed and interpreted. That ultimately aims at developing a body of knowledge and practices so that the nurses can optimize the efficiency of health care of individual and community with Compassion, Competence, Confidence, Conscience and Commitment.”**(7)**

**Research Paradigm**

* According to Kuhn, the research paradigm as “ an integrated cluster of substantive concepts, variables & problems attached with corresponding methodological approaches and tool”.
* “According to Guba, 1990 , the research paradigms can be characterized by the way scientists respond to three basic questions: ontological, epistemological and methodological questions”.

**Different paradigm**

• Positivism

• Post-positivism

• Critical theory

• Constructivism

• Pragmatists

**Which research paradigm your research belongs to?**

**Positivist:**

* There is a single reality

* Can be measured and known
* Quantitative method

**Constructivist :**

* There is no single reality or truth/ There is multiple realities

* Reality needs to be interpreted
* Quantitative methods

**Pragmatists:**

* Reality is constantly renegotiated, debated, interpreted
* Best method to use is the one that solves the problem
* Consider the practical effects of the objects of your conception

The **Table number – 1**, presents comparative accounts of two research paradigm **:**

|  |  |  |
| --- | --- | --- |
|  **Assumption**  | **Positivist Paradigm** | **Naturalistic paradigm** |
| Ontologic**Example:** “What is the nature of reality”? | “Reality exists; there is a real world driven by real natural causes” | “Reality is multiple and subjective, mentally constructed by individuals.” |
| Epistemologic **Example**: “How is The inquirer related to from those being researched”?  | “The inquirer is independent from those being researched; findings are not influenced by the individual.’’ | “The inquirer interacts with those being researched; findings are the creation of the interactive process.” |
| Axiologic **Example:** “What is the role Values in the inquiry”? | “Values and biases are to be held in check; objectivity is sought” |  |
| Methodologic**Example:** “How is knowledge obtained” ? | “Deductive processes Emphasis on discrete, specific concepts. Verification of researchers’ hunches Fixed design Tight controls over context, Emphasis on measured, quantitative information; statistical analysis, Seeks generalizations”. | “Inductive processes Emphasis on entirety of some phenomenon, holistic Emerging interpretations grounded in participants’ experiences Flexible design, Context-bound, Emphasis on narrative information; qualitative analysis, Seeks patterns.” |

**Research Methods or approach**

* “Research methods are selected that facilitate to plan a study systemically, to collect data and investigate information.”
* “Qualitative and Quantitative are the two major research methods or approaches used in nursing studies.”
* “Qualitative is a systematic, interactive and subjective approach used to describe life experiences and give them meaning”. This type of research is conducted to describe and promote understanding of human experience, perception such as stress, trauma, quality of life etc. by using non-statistical methods of analysis. It is associated with

naturalistic inquiry which explores the complex experience of human beings. Qualitative research explores a subjective, holistic pathway which helps to develop theory (Borbasi and Jackson 2012).”**(8)**

* “Whereas quantitative research is based on scientific method, qualitative research suits behavioural and social sciences as it aids in understanding the unique nature of human beings (Burns and Grove 2009).”**(9)**
* “ Qualitative research can generate information that can help nurses by informing clinical decisions. Qualitative nursing research focuses on patients and health professionals’ experiences. Through this approach the reality of people’s experiences and lives are not over simplified and subsumed into a number or a statistic (Hoffmann et al 2013, p.223).While, “Quantitative research is a formal, objective, and systematic process in which numerical data are used to obtain information about the world”. The example of quantitative research question: what is the prevalence/ incidence of drug abuse, disease, smoking, disability in India on a reference year” ? Both approaches are needed to provide knowledge in nursing discipline.”

“Before understanding the two methods let’s discuss the purposes of nursing research- which can be classified as general purpose and specific purpose. The general purpose of nursing research is to answer questions or solve problems of relevance to the nursing profession. For example, “a researcher may perform detail study to well recognize for normal grieving processes, without having direct nursing application in mind. Applied research focuses on finding solution to existing problems”. “The specific purposes of nursing research include identification, description, exploration, explanation, prediction, and control. Within each purpose, various types of question are addressed by nurse researchers; certain questions are more amenable to qualitative than to quantitative inquiry, and vice versa. A comparative account is given below.”

**Identification and description**

“Qualitative researchers sometimes study phenomena about which little is known. The in-depth, probing nature of qualitative research is well suited to the task of answering such questions as, “What is this phenomenon?” and “What is its name?”. Example of qualitative nature of identification is that “Weiss and Hutchinson (2000) **(12)** inquire to people with

diabetes & hypertension to find out basic social problems that affect their attachment to health care directives, which can be done through in-depth interviews with clients.”

**Explorations**

* “Exploration begins with a phenomenon of interest ; but rather than directly detecting & elaborate it, exploratory research look over the full nature of the phenomenon, the manner in which it is exhibit, & the other factors to which it is related. For example, a descriptive quantitative study of patients’ preoperative stress might seek to document the degree of stress patients experience before surgery and the percentage

of patients who actually experience it.”

* Exploratory qualitative research is plan to grow on the several method in which a fact is exhibit & on basic activities. “Quantitative example of exploration studied the incidence and severity of nausea accompanying combinative antiretroviral therapies among HIV infected patients, and explored patterns of nausea in relation to patient characteristics.”
* “Qualitative example of exploration: Through in-depth interviews, Sadala and Mendes (2000) explored the experiences of 18 nurses who cared for patients who had been pronounced brain dead but kept alive to serve as organ donors.”

**Explanations**

 In the ambit of qualitative research approach, explanation can be sought in the nature of questions such as “What is the full nature of the phenomenon ?”

* “What is the process by which the phenomenon evolves?”. While in quantitative methods, we seek answer to questions such as what factors causes such phenomena, what is the measurable association between the phenomena.
* Qualitative example of explanation: Hupcey (2000)undertook a “study that involved the development of a model explaining the psychosocial needs of patients in the intensive care unit.”

**Prediction and Control**

* “What will happen if we alter a phenomenon or introduce an intervention? If phenomenon A occurs, will the phenomenon B follow is prediction. How can we make the phenomenon , happen or alter its nature or prevalence, can the occurrence

of the phenomenon be prevented or controlled are examples of controlling the phenomena.”

* Yet it is regularly feasible to make predictions & to control fact based on research results, even in the absenteeism of total recognize. For example: “research has show that the prevalence of down syndrome in infants rises with the age of the mother.”

**Current Issues In Nursing Research**

**Phases of Research:-**

**The Conceptual Phase:**

* Lack of significant research problem.
* Inadequate search strategy & other assistance.
* Conceptual framework : need or obstacle.
* Challenge to know & test hypothesis.

**The Design & Planning Phase:**

* Lack of expertise of researcher to identify appropriate research design.
* Inability to understand power analysis.
* Neglecting the importance of eligibility criteria.
* Lack of standardized tools.
* Handling of ethical issues.

**The Empirical Phase:**

* Data collection.
* Arranging & preparing data for analysis.
* Inadequate training & understanding of data collection methods.
* Technical constraints to organize & prepare data for analysis.

**The Analytic Phase:**

* Analysing the data.
* Interpreting results.
* Complete dependency on bio-statistician for analysing data.
* Difficulty to interpret the findings or analysed data.

**The Dissemination Phase:**

* Communicate the results.
* Utilize the results.
* Lack of guidance/ impatience to share findings/ academic pressure creates improper dissemination of research finding.
* No plan of utilizing the findings.
* Inadequate understanding of research methodology especially qualitative and mixed method.
* Lack of scientific training for research methodology.
* Inadequate knowledge of plagiarism.
* Overlapping of research studies.
* Limit explore of multi-disciplinary research.
* Lack of adequate and timely secretarial assistance.
* Insufficient library management.
* Limited scope of laboratory research in India.
* Measuring qualitative phenomenon through quantitative way.
* Lack of understanding of evidence-based nursing or practice.

**Future Trends In Nursing Research**

1. Continued focus on Evidence Based Practice
2. Development of a stronger evidence base through confirmatory strategies
3. Greater emphasis on systematic review
4. Innovation
5. Expanded local research in health care settings
6. Strengthening of interdisciplinary collaboration
7. Increase focus on cultural issues & health disparities
8. Clinical significance & patient in-put

**Trends/ Challenges In Nursing Research**

* Professional judgement.
* Defining “care”.
* Electronic network & computer use.
* Problem based learning.
* Multidisciplinary health team approach.
* Independent area of practice.
* Holistic care approach.
* Specialized services.
* Use of advance technology.
* Human relation in nursing.
* Provision for nurse consultant, specialist nurse, nurse advisor, nurse researcher, nurse manager.

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