



Defining the Language of Research: An SNRS Consensus Statement

Words matter – terminology is a basic element of communication. A common adage is that if something cannot be named, you cannot measure, research, or teach it (Clark & Lang, 1992). In the clinical setting, use of consistent terminology is essential and contributes to improved patient outcomes (Muller-Staub, Needham, Odenbreit, Lavin, & Van Achterberg, 2007), improved communication among nurses (Saba & Taylor, 2007), and improved communication between nursing and other healthcare disciplines (Dingley, Daugherty, Dereig, & Persing, 2008). Nursing-specific research terminology facilitates the development of nursing knowledge and the transfer of that knowledge into practice.

To facilitate clarity on terminology used in nursing research, the Southern Nursing Research Society (SNRS) Board of Directors appointed a taskforce to identify commonly misunderstood research terms, followed by a comprehensive literature review and analysis of the identified research terms to create a research terminology consensus paper. The goal was not to create a comprehensive glossary of commonly understood research terms but to provide clarity on some of the common approaches to nursing research.

The purpose of the taskforce aligns with the SNRS strategic priority area of “leading, defining, and advancing the nursing research agenda,” specifically with the aim of developing position and consensus statements. The SNRS Board believes that



this consensus statement will provide clear definitions to guide the mission, strategic initiatives, and policies of the organization and its stakeholders, which include nurse scientists, doctoral nursing students, and schools of nursing.

These definitions provide the framework for describing and evaluating nursing research. Ideally, these definitions will be used as an educational tool by faculty in nursing schools and colleges creating a wide awareness and visibility of SNRS as a leader in nursing research.

This consensus paper was reviewed and revised as needed until consensus was reached by the Board of Directors and SNRS members.

Cimino (1998) proposed some components for well-functioning terminology to include 1) a single, coherent meaning of each concept in the vocabulary, 2) a unique identifier for each concept, and 3) formal and explicit methods that promote recognition of the concept.

The following definitions are presented in groups of similar concepts using the components suggested by Cimino (1998). By using this approach, we hope to help the reader make distinctions between similar concepts. First, science and research are defined, followed by types of reviews, approaches to clinical research, and ending with concepts in secondary data analysis.

Science and Research

Science is the knowledge or system of knowledge generated from an organized scientific method investigation based on scientific theories and/or hypotheses; science

is a coherent body of knowledge composed of research findings and tested theories for a specific discipline (Gray, Grove, & Sutherland, 2016).

Scientific method is a sequence of steps followed in the investigation of a phenomenon. The scientific method consists of making observations, identifying a problem or proposing a research question, searching the literature and other sources for existing knowledge, formulating a hypothesis, conducting an investigation, analyzing results or testing hypotheses, drawing conclusions from the results, and reporting results.

Research. Research is a systematic investigation designed to develop or contribute to generalizable knowledge.

Nursing Science is the substantive discipline-specific knowledge generated through research investigating the protection, promotion, and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, communities, and populations (American Nurses Association, 2010; Barrett, 2002).

Nursing science is the discipline-specific knowledge that reflects differing philosophical perspectives that give rise to ontological, epistemological, and methodological processes for the development and use of knowledge concerning nursing's unique phenomena of concern (Barrett, 2002).

Types of Reviews

The review of literature is an essential element of most research designs. Generally speaking, a literature review is a collection of selected articles and other

sources about a specific subject. However, the structure and conduct of the review varies widely depending on the function it is intended to serve.

Integrative Review. Integrative reviews summarize the past empirical or theoretical literature in a way that leads to a more comprehensive understanding of a particular phenomenon or problem (Whittemore & Knafl, 2005). In an integrative review, the nurse researcher considers sources such as experimental and non-experimental research, theory, and methodology works. Depending on the aim of the integrative review, it may include presenting the state of the science on a topic, contributing to theory development, or applying findings to practice and policy.

Synthesis Review. Synthesis involves combining two or more elements to form a new whole. In a synthesis review, the researcher first methodically searches the literature including research and other sources of information produced by researchers and practitioners in the field (sometimes called gray literature) using pre-identified screening criteria for a specific area or phenomenon. Data selected for inclusion are described, summarized, and analyzed (or abstracted) to identify key concepts of the whole body of work reviewed. In a synthesis review, the researcher compares and contrasts the works included and makes interpretations about what the whole body of work says in order to draw conclusions. The aim of the synthesis review is to understand existing literature findings in order to draw conclusions about the research question or propose new research questions.

Systematic Review. A systematic review, sometimes also known as a comprehensive systematic review, is a review of evidence that 1) focuses on a clearly

formulated question, 2) uses systematic and explicit methods to identify and select primary research for inclusion, 3) critically appraises selected research using established standards, and 4) uses standard methods to extract and synthesize study findings. A common way to formulate a question for step one is the PICO question format. PICO is an acronym for patient, problem, or population; intervention; comparison, control, or comparator; and outcome. The process of the systematic review must be clearly described so that the methods used are transparent and reproducible. The aim of a systematic review is to deliver a meticulous summary of all the available primary research in response to a research question (Clarke, 2011) in a way that is comprehensive enough to avoid outcome bias (National Health and Medical Research Council, 2005).

Scoping Review. When a body of literature is large and complex, is heterogeneous in nature, or has not yet been comprehensively reviewed, scoping reviews are helpful to synthesize research evidence, categorize existing literature, or identify gaps in the existing literature (Peters, Godfrey, Khalil, et al., 2015). The scoping review can be distinguished from the synthesis review by the absence of critical appraisal. Critical appraisal of the literature is not an element of the scoping review, because the intent is not application to policy or practice. Because of their broad approach, scoping reviews are not well-suited for specific clinical questions. The aim of the scoping review is to assess the potential size and scope of available research literature, to identify gaps in the existing literature, or to clarify definitions and conceptual boundaries of a field (Kastner et al., 2012).

Approaches to Clinical Research

In clinically-based disciplines such as nursing, research occurs across a broad spectrum of settings, often leading to confusion, or even controversy, about how various types of research should occur in the clinical setting. The following definitions do not include all of the approaches to nursing research; this list is intended to provide clarity about some of the common approaches to clinical research.

Evidence-Based Research. Evidence-based research seeks to eliminate research that is redundant, poorly designed, or inappropriate by placing it in the context of existing evidence that has been systematically examined (Lund et al., 2016). Evidence-based nursing practice, on the other hand, is the intentional and conscientious approach to clinical practice that incorporates the best evidence from quality studies along with patient values and clinical expertise to make decisions about care (Black, Balneaves, Garossino, Puyat, & Qian, 2015). For evidence-based research, systematic use of prior research, often in the form of a systematic review, should inform any new study. The aim of evidence-based research is to assure that existing evidence informs the planning of new research.

Implementation Research. Implementation research is also known as improvement research. Improvement research is the scientific study of methods to promote the systematic uptake, or implementation, of clinical research findings and other evidence-based practices into clinical practice, resulting in improved quality and effectiveness of health care (Glasgow, 2010). Context and users of the research are both important concepts in implementation research. Dissemination research is a

method that falls under the category of implementation research and refers to the study of processes and/or variables that influence adoption of evidence based practices by various stakeholders (Glasgow, 2010). The design for quality improvement research should minimize bias and maximize generalizability (Eccles, Grimshaw, Campbell & Ramsay, 2003). The aim of implementation research is to accelerate the movement of evidence-based practices, programs, and interventions into real world settings to have a sustainable impact on health (Norton, 2014; Peters, 2013)

Translational Research. The definition of translational research is evolving, but is broadly defined as research that takes discovery from the bench to the bedside and back again (Fort, Herr, Shaw, Gutzman & Starren, 2017). In 2007, the National Institutes of Health (NIH) defined translational research in two phases. T1 is the process of taking discoveries generated during lab research and preclinical studies to the development of trials and studies in humans. T2 is research that seeks to enhance adoption of best practices, including cost-effectiveness (NIH, 2007). As the concept of translational research has evolved, Fort's systematic review (2017) suggests that there are now 5 phases, or types, of translational research. T3 focuses on implementation and dissemination research. T4 focuses on outcomes and effectiveness in populations. T0 involves research such as genome-wide association studies, or whole genome association studies (Fort et al., 2017).

Secondary Data Analysis

As the body of nursing research grows, the use of secondary data analysis is an increasingly common and efficient way to approach nursing research (Dunn, Arslanian-

Engoren, DeKoekkoek, Jadack, & Scott, 2015). Secondary data analysis is the use of existing data collected for prior studies for a research project that is different from the original works. In addition to analysis of data obtained from large datasets, meta-analysis and meta-synthesis are also common in nursing.

Meta-Analysis. Meta-analysis is the statistical analysis of the results of several closely related quantitative studies to calculate an overall effect. Meta-analysis is a complex method requiring considerable knowledge about the research topic and skill as a quantitative researcher (Shorten & Shorten, 2013). Meta-analysis requires two or more researchers for inter-rater reliability. Meta-analysis does not pool data from several studies to achieve a larger sample size. Rather, the researcher defines a clinical question and proposes hypotheses. Eligibility and inclusion criteria are defined along with a strategy for identifying relevant studies. Data are extracted and carefully prepared for analysis. The final step is calculation of the overall effect of the combined data. Reporting guidelines for meta-analyses, such as Preferred Reporting Item for Systematic Reviews and Meta-Analyses (PRISMA) provide an evidence-based set of items for inclusion and template for presentation of results and assurance of transparency in reporting (Gurevitch, Koricheva, Nakagawa, & Stewart, 2018). Meta-analysis is helpful for making recommendations about the most effective interventions, but can also identify gaps or limitations in current practice (Shorten & Shorten, 2013).

Meta-Synthesis. Meta-synthesis is the systematic review and integration of findings from several related qualitative studies (Lachal, Revah-Levy, Orri, & Moro, 2017). Meta-synthesis is a complex method requiring skill in qualitative methods and

considerable time to complete. In meta-synthesis, the researcher carefully defines the research question and pre-specified inclusion criteria, assesses the quality of the studies included in meta-synthesis using the pre-determined measure, extracts and presents the data from the studies, analyzes the combined data using a pre-determined analysis method, and synthesizes the data into a coherent whole. Generalizability of meta-synthesis findings requires that the researcher assure validity through systematic sampling and a clear audit trail (Finfgeld-Connett, 2010). The researcher should only include high-quality studies in meta-synthesis. The aim of meta-synthesis is to generate a theory about a specified research question or develop a hypothesis for future research.

CONCLUSION

As nurses continue to advance science through scholarly work, the need for consistent, standardized nursing research terminology is essential. As the professional research organization representing nursing in the southern region of the United States, SNRS leads in defining and advancing nursing research. Consistent with Cimino's (1998) recommendations, these definitions provide a single, coherent meaning of each concept in the vocabulary, unique identifiers for each concept, and formal, explicit methods to promote recognition of the concept.

This consensus statement creates a framework for describing and evaluating nursing research through definitions for essential research terminology to promote consistency and excellence in nursing research. The definitions represent expert consensus and reflect current literature.



SNRS calls upon nurses, nurse leaders, and collaborators who engage in research and/or use research findings to embrace the definitions presented in this consensus statement. Furthermore, SNRS calls on all nursing professionals to engage other nurses in utilizing consistent terminology in order to optimize communication of nursing research and to advance the science of nursing.

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	Inclusion Criteria	Assessment of included studies using a pre-identified evaluation tool or standards	Include materials other than research, such as theory, white papers	Synthesize included studies	Abstract or summarize included studies	Must describe process used so methods are reproducible	Define a clinical question	Propose a hypothesis
Comprehensive Systematic Review	✓	✓		✓		✓	✓	
Integrative Review			✓		✓			
Synthesis Review	✓		✓	✓				
Systematic Review	✓	✓		✓	✓	✓		
Scoping Review			✓		✓			
Evidence Based Research	✓	✓	✓		✓			
Meta Analysis	✓	✓		✓		✓		✓
Meta Synthesis	✓	✓				✓	✓	

Table 1: Elements of definitions