

Basic Overview and Key Terms Identified

What is the difference between research, evidence based practice and quality improvement (QI)? This question often overwhelms nurses and others into a sea of confusion. Therefore, some of the common terms that will be used in this course need to be broken down on some basic level to serve as a foundation to all other principles that you will uncover in this course.

Defining the Terms:

Evidence based practice (EBP) has emerged in the literature recently through the years and has become a staple in healthcare practices. The idea of using EBP allows the best evidence to guide practice. This evidence typically comes from research conducted by nurses and, or other professionals in the health care field. In comparison, **research** is systematic inquiry of specific methodology to problem solve and answer questions thereby expanding, developing or refining knowledge. Research can then be further categorized into other areas such as: **nursing research** which leads to the discovery of important evidence related to nursing as a profession, nursing practice, education, administration and informatics. **Clinical nursing research** is research which guides nursing practice to ultimately improve the health of patients (Craig & Smythe, 2012; Polit & Beck, 2012). As a result of this growth in EBP, nursing practice has changed significantly and frequently over the years. Similarly, **quality improvement** consists of systematic and continuous actions that lead to measurable improvement in health care services and the health status of targeted patient groups. The steps taken in this process start with the organization understanding how these processes are achieved to ensure the appropriate outcomes are met. Therefore, QI involves a team approach so that outcomes are measurable and enduring. Research and EBP are further needed in this process because the data supports the QI initiative (U.S. Department of Health and Human Services [USDHHS], n.d.).

Translational Research:

In order for these changes in health care and nursing to continue, nurses must understand the concept of **translational research**. Translational research is the process of translating the evidence from studies into nursing practice. Therefore, one must begin to understand the quality of studies, develop skills in locating the evidence from the literature, understanding and critiquing the evidence. Doing so will allow for more hospitals to reach Magnet status as they apply the best evidence directly into treating and caring for patients at their facilities. Additionally, collaboration with other members of the health care team is imperative to expand the knowledge learned from searching the literature and implementing best evidence into practice. Likewise, dissemination of findings is imperative to this process so that all disciplines with similar interests can learn about the best evidence in practice. Nurses can disseminate findings within their own facilities on the local or community level, while also informing others of best practice techniques with participation of professional organizations/conferences, consumer organizations, governmentally and in the corporate world which help to support research projects and ideas. Activities that allow others to see what and how research and EBP influence the nursing profession will ultimately lead to better patient outcomes (Hall & Roussel, 2014).

Quantitative versus Qualitative:

Now that a basic understanding of research, EBP and QI has been provided, the next focus will be on understanding the various types of research and EBP that co-exist among each other. The terms quantitative and qualitative are 2 terms that will be embedded in literature both directly and indirectly. Therefore, understanding the differences between them is imperative.

Quantitative is recorded as numeric information recorded from formal measurement and undergoes statistical analysis. For example if a researcher wanted to determine the level of pain a patient was undergoing after surgery, the patient could state a number between 0-10 to explain the severity of their pain. On the other hand, **qualitative** information is derived from a more narrative and subjective manner. For example, a researcher may ask a patient to discuss how they felt after they were diagnosed with Breast Cancer. Thus, information stated by the patient would be recorded for the researcher to use in the narrative form; information from this interview with the patient could not be translated into a numeric format, because every patient interview would have varying answers. Understanding the design and methods of a study are essential to comprehend the study itself. The **methods** are the steps or procedures for gathering and analyzing the data in the study, whereas the **design** serves as the type of study employed. Oftentimes, the design is based on the clinical question asked. See the table below to help you understand how a question influences the design:

Questions about effectiveness of an intervention	Randomized Controlled Trial (or systematic review)
Questions about the accuracy of a diagnostic test	Studies that compare the new test against a reference standard test
Questions about prognosis	Cohort studies, or when the outcome is rare or the required duration of follow up is long a case-control study
Questions about etiology or causation	Case-control or cohort study
Questions about perceptions, attitudes and beliefs	Qualitative research of various approaches

Study Design Basics

In healthcare, a common approach is combining qualitative and quantitative research within the same study, commonly referred to **mixed methods research**. The rationale for using a mixed methods approach is that researchers feel that they will both contribute to the understanding of the study rather than only using one type of research. When used, the research process will need to be further explained so that there is a clear understanding of when methods were mixed and in what stage of the research design. Therefore, comparisons can be made within groups over time and between groups of participants.

More specifically a **randomized control trials (RCTs)** is considered the gold standard design for primary research. While they are helpful in discovering the effectiveness of healthcare interventions, they can't answer all of the questions needed, nor is it always ethical to use a RCT method. According to Polit and Beck (2012), a RCT is defined as a full experimental test of an intervention, involving random assignment to treatment groups, sometimes phase III of a full

clinical trial. Looking back in history at some of the major ethical issues people faced, it is easy to see why a RCT is not an appropriate or ethical design method if only some of the subjects will receive a life sustaining treatment for an illness. In comparison to a RCT, a **quasi-experimental design** does not randomly assign subjects to a treatment condition. Sometimes, this type of study is also referred to as a *non-randomized trial* or a *controlled trial without randomization*.

Another type of study is a **case-control design** which is a non-experimental research design involving the comparison of a case (person with the condition being looked at such as breast cancer) and a matched control (comparing a similar person without the condition). In comparison a **case study** is a research method involving a thorough in-depth analysis of an individual, group or other social unit. **Cohort designs** or *prospective designs* offer the opportunity for a group of people known as a cohort to be followed and studied over time. This type of study is non-experimental and allows for outcomes to be measured over a longer timeframe. In this study design, the researcher may start with the cause and move forward to see how the cause effects the participant in time. For example, the effects of smoking and lung cancer. On the other hand, a **retrospective design** starts with the dependent variable (i.e. lung cancer) and tries to uncover the cause by looking at the subject's past (i.e. smoking).

In comparison, a **cross –sectional design** allows for data to be collected at only one point in time, possibly from different age or developmental groups to see how time effects change. When researchers aim to collect data at various points in time, they will employ a **longitudinal design study**.

Sometimes in a qualitative study as the researcher makes design decision based on what has been learned, a design method unfolds, known as an **emergent design**. Another type of qualitative study is an **ethnography** which serves to focus on culture and understand the view of those in the study.

Although these studies help in understanding some of the techniques used by researchers, there are still a few more methods to discuss in research. A **meta-analysis** is a technique for *quantitatively* integrating results of multiple similar studies addressing the same research question. Hall and Roussel (2014) state “a meta-analysis is used after data has been extracted in the systematic review process” (p. 19). On occasion a **systematic review (SR)** is used interchangeably with the term meta-analysis, however, a SR involves rigorous synthesis of research findings associated with a specific question and uses systematic sampling and data collection procedures and formal protocols. The overall goal of each of these is to create unbiased collection of information from the literature on a particular clinical question. Therefore, this type of evidence is marked as the highest level of evidence on the hierarchy of evidence which will be further discussed later in this unit.

A **meta-synthesis** is used with *qualitative* studies on a specific topic, and aims to interpret translations produced form the integration of comparison of findings. To clarify, a meta-synthesis *is not a literature review or concept analysis*. Although harder to define a meta-synthesis offers an accumulation of qualitative evidence to be gathered and synthesized to that the overall phenomena of the various findings can be transformed uniquely together.

Although many research designs exist, they are all uniquely helpful in making discoveries in healthcare, producing best patient outcomes. The information provided here is simply an overview; your textbooks will serve as a greater, more in-depth look at any of the topics mentioned and much more.

References

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