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PRINCIPLES & PRACTICE

Using Q Methodology in Quality Improvement Projects

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ABSTRACT

Q methodology consists of a philosophical framework and procedures to identify subjective viewpoints that may not be well understood, but its use in nursing is still quite limited. We describe how Q methodology can be used in quality improvement projects to better understand local viewpoints that act as facilitators or barriers to the implementation of evidence-based practice. We describe the use of Q methodology to identify nurses' attitudes about the provision of skin-to-skin care after cesarean birth.

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Q methodology, or Q for short, was created by physicist and psychologist William Stephenson (1935, 1953) to provide a philosophical framework and set of techniques to study subjectivity. Now considered a mixed-methods research design, Q methodology is characterized by the use of a person-centered sorting process to gather data followed with by-person factor analysis to find groups of individuals with shared perspectives (Brown, 1980; Ramlo & Newman, 2011; Watts & Stenner, 2012). With small sample sizes and computer-facilitated data analysis, some of the best features of quantitative and qualitative designs are combined in Q studies (Brown, 1996; Ramlo, 2016). This method holds particular promise in nursing as a systematic way to identify attitudes that may influence care (Akhtar-Danesh, Baumann, & Cordingley, 2008; Barker, 2008; Simons, 2013). In this article, we discuss how Q methodology can be used to identify local viewpoints during the quality improvement process and present an example of its application.

Using Q Methodology to Study Preferences

Q methodology provides a theory and a process to identify subjective viewpoints surrounding a given topic in a population. Arising from the Concourse Theory of Communication (Stephenson, 1972), Q methodology is based on the principle that subjectivity, defined as person's viewpoint, is always self-referenced, and yet it can be communicated and studied in a systematic way (McKeown & Thomas, 2013). This research method gained initial popularity with a small group of social scientists after the publication of the book *Political Subjectivity: Applications of Q Methodology in Political Science* (Brown, 1980), but there is a growing interest in recent years in the use of Q to study subjectivity among a wider variety of disciplines, including nursing (Akhtar-Danesh et al., 2008; Barker, 2008; Newman & Ramlo, 2010; Paige & Morin, 2016; Simons, 2013). Q studies hold potential value in nursing because their use provides rich data about participants' viewpoints on a wide range of topics including routine practices, life experiences, health beliefs, educational experiences, and client–provider relationships (Akhtar-Danesh et al., 2008; Barker, 2008; Simons, 2013). Perhaps Q methodology's greatest value to nursing comes from its unique ability to identify preferences (Simons, 2013), a key factor in delivering evidence-based, patient-centered care (Cronenwett et al., 2007; Cronenwett et al., 2009). Understanding nurses' preferences is important because nurses directly influence the care a person receives and, therefore, that person's outcome.

Quality improvement involves the systematic use of data to improve care in a specific care setting (Lowe & Cook, 2012). A weakness in the use of

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Q methodology provides a theory and a process with which to identify subjective viewpoints surrounding a given topic in a specific population.

rating scales to obtain subjective data is that they provide information primarily based on the perspective of the person constructing the test, and how an individual actually feels about the topic of investigation may not be captured (Brown, 1980; McKeown, 2001). Q methodology provides an alternative way to systematically gather data on stakeholder viewpoints, which may serve as barriers or facilitators to the delivery of evidence-based care (Simons, 2013). Q studies use a characteristic data collection technique known as *sorting* that allows participants to move from being passively studied to actively constructing meanings of what they believe is most important (Brown, 1980; Simons, 2013).

Assessment data about a group's strongest beliefs, attitudes, opinions, and preferences gathered through a Q study can be used to identify barriers to implementation, thereby informing quality improvement initiatives. For example, Alabama used data from a Q study to help set priorities for home visits (Preskitt, Fifolt, Ginter, Rucks, & Wingate, 2014). Another team conducted a Q study to help determine what cultural aspects in nursing homes were most in need of change (White et al., 2012). We describe how Q methodology was used, as part of the quality improvement process, to identify barriers to the implementation of skin-to-skin care in the operating room with cesarean births.

Quality Improvement Project Objectives

The context for the project was a Baby-Friendly, Level 2 hospital with more than 2,000 annual births and an overall 26% cesarean rate in the Midwestern United States preparing for Baby-Friendly re-designation. The study team consisted of the unit's lactation consultant responsible for oversight of the designation process, a baccalaureate nursing honors student who also worked as a technician and nurse intern on the unit, and a former NICU nurse and researcher with expertise in Q methodology. We used the Plan–Do–Study–Act (PDSA) cycles as described by the Institute for Healthcare Improvement (2016). During the Plan phase, we set the project objectives and planned the data collection process. During the Do phase we collected data and began analysis. We summarized lessons learned during the Study phase. In the Act phase we made decisions about changes. Planning the change began a new cycle.

As per Baby-Friendly USA (2011) guidelines, skin-to-skin care should be initiated after a cesarean birth, unless there is a medical reason to justify delayed contact. Our initial PDSA cycle showed that skin-to-skin care after cesarean births was often delayed and interrupted. Most often, newborns were taken directly to the radiant warmer in the operating room. They were brought to the mother and support person only after being dried, swaddled, and fully assessed. Most newborns spent more than 5 minutes on the warmer, leading to delays well past when the mother was able to respond to her newborn. Surveys also showed that newborns often went to the recovery area with the support person and nurse before completion of the surgery, where nurses administered the routine newborn medications.

Initially, the root cause of this practice gap in care was believed to have arisen from a lack of thorough education on the evidence-based benefits behind the new Baby-Friendly USA (2011) guidelines. As a way to correct this deficiency, staff education on the benefits of immediate skin-to-skin care was implemented during staff meetings. However, a second PDSA cycle showed that instances of skin-to-skin contact in the operating room did not improve. We determined that a better understanding of what attitudes nurses had about providing skin-to-skin care in the operating room after a cesarean birth was needed. We then planned to gather that information through a Q methodology study.

Developing the Study Materials

The process of conducting a Q methodology study begins by capturing the universe of subjective communication about a topic within a given population known as the *concourse* (Ramlo, 2016; Simons, 2013; Watts & Stenner, 2012). Although using statements is the most common way to build a concourse, other forms of stimuli can be used including recordings, pictures, and audio (Brown, 1996; Ramlo, 2016). Traditionally, statements for the concourse are gathered through interviews, but these are frequently supplemented with items from other published sources (McKeown & Thomas, 2013).

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