

### **Research article critique: Neonatal cord care**

The assigned article on neonatal cord care and newborn mortality rate in rural India is a research study. The researchers used a quasi-experimental design based on the method of scientific inquiry to conduct a survey of the effect of clean cord care on newborn mortality rates in the two district study sites of Barabanki, the intervention district, and Unnao, the comparison district, in Uttar Pradesh, India. It contained both independent and dependent variables. The independent variable is clean cord care and the dependent variable is the newborn mortality rate. The study used independent researchers and multivariate logistic regression models to adjust for confounding (extraneous) variables. The extraneous variables were the mother's age, education, caste/tribe, religion, household wealth, newborn thermal care practice, and care-seeking during the first week after birth and study arms (Agrawal et al., 2012). It was externally peer reviewed and exhibited both internal and external validity. Internal validity is confirmed by the independent variable of clean cord care on the reduction of the newborn mortality rate. External validity is supported by the randomization of the participants in the two districts in the study, and the previous results obtained in the other studies in rural areas of developing countries like South Asia.

The question the researchers in the study wanted to know was if clean cord care practices would reduce the newborn mortality rate in rural Uttar Pradesh, India. The population of interest is newborns in the two districts in the study. The study used quantitative data to reach its conclusions. Quantitative research is defined as, "Research directed at the discovery of relationships of cause and effect" (Fain, 2013, p. 215).

Although there isn't a stated hypothesis, it is clear the researchers are hypothesizing that clean cord care practices will reduce newborn mortality rates in singleton home births in rural

Uttar Pradesh, India. This type of hypothesis would meet the criteria for a directional hypothesis. A directional hypothesis is defined as “the direction of the relationship between variables” (Fain, 2013, p. 110). When researchers use a directional hypothesis it is easier to see the relationship between the variables being studied (Fain, 2013). The authors do not state a null hypothesis. An appropriate null hypothesis would be; there will not be a difference in newborn mortality rates with or without the use of clean cord practices.

There was no mention of a theoretical framework or conceptual model. Analysis of the article implies the use of a middle range theory. Middle range theories, “look at a piece of reality and contain clearly defined variables in which the nature and direction of relationships are specified” (Fain, 2013, p. 94). The reality is high newborn mortality rates. The variable is clean cord care practices and the nature and direction of relationships are the use of clean cord care practices and a reduction in newborn mortality rates.

The study would meet the criteria for a level 3 on the Joanna Briggs Institute Levels of Evidence. The study contained a cohort study and a confidence interval of 95% but the ranges listed were wide and varied (Hopp & Rittenmeyer, 2012).

## References

- Agrawal, P. K., Agrawal, S., Mullany, L. C., Darmstadt, G. L., Kumar, V., Kiran, U., ... Baqui, A. H. (2012, April 6). Clean cord care practices and neonatal mortality: evidence from rural Uttar Pradesh, India [Article]. *Journal of Epidemiology and Community Health*, *66*(8), 755-758. <http://dx.doi.org/10.1136/jtech-2011-200362>
- Fain, J. A. (2013). *Reading, understanding, and applying nursing research* (4th ed.). Philadelphia, PA: .
- Hopp, L., & Rittenmeyer, L. (2012). *Introduction to evidence based nursing: A practical guide for nursing*. Philadelphia, PA: F. A. Davis Company.