**Meta-Analysis, Meta-Synthesis, and IR Safety Checklist**

**Meta-Analysis and Meta-Synthesis**

Meta-analysis is influential for carrying out systematic assessment and also combining the findings of related research studies with the primary goal of producing a summary of the results in the area of concern. Meta-synthesis, as a framework used in nursing literature, is known to elaborate on the interpretive processes of synthesizing data. The method is specifically used in synthesizing non-experimental research studies that are assessing a phenomenon of interest. Accordingly, the first step in the meta-analysis method process is formulating a focused clinical question that is followed by the development of a systematic review protocol guided by the use of a PICO format. The third significant step is conducting literature search followed by identification of data and data abstraction. The sixth step entails assessing the risk of bias and the last step entailing quantitative synthesis or meta-analysis (Singh, 2017).

The steps involved in the meta-analysis method process are essential but the most important step is the first that entails developing a focused clinical question. The step is significant since it influences the intended outcome and the other steps involved rely on the designed question. In the event the question formulated is broad or narrow, the researcher using the method is bound to make a superficial inference on the topic of analysis. The processes of abstracting data in a meta-analysis offer the research team the opportunity to calculate the effects of data (Munn, Tufanaru, & Aromataris, 2014). Therefore, a meta-analysis is the one that is most likely to be used to guide the proposed DNP change project. Arguably, there is a possibility of researcher bias in the event a meta-synthesis is selected and used to conduct a research study. A more generalizable finding is reached when a higher level of abstraction is utilized, but in the event, a reverse is experienced bias is inevitable. Also, subjective analysis and reasoning of the researcher is an avenue that can make a meta-synthesis to record biases that ultimately impact on the significance of the result. Additionally, the process of summarizing findings from related studies in the area of concern pose challenges and are significant sources of bias (Hou et al., 2017).

**Meta-Analysis: Evaluation of Evidence and Application to Practice Issue**

The article that is selected for analysis is “Effect of Using a Safety Checklist on Patient Complications after Surgery” conducted by Gillespie et al. (2014). The research team identified 207 interventional studies and used 3.4 percent of the identified studies (seven articles) that met the inclusion criteria and such translated to 37,339 patients. The population of patients that are used in the study is large enough to produce meaningful data that informed the inferences made by the researchers. The methods of analysis that are used in the study include the I-squared and the chi-square tests for statistical heterogeneity and also conducted sensitivity analyses to test the robustness of the findings. The methods are significant since the research team set the significance level of the chi-square test at a P value less than 0.05. Also, the authors determined the degree of statistical heterogeneity in the event the I-squared was greater than or equal to 50 percent (Gillespie et al., 2014).

Determining the quality of a study is significant before considering the said research results for use to guide proposed practice change. Assessing the quality of the meta-analysis can be done through conducting tests of heterogeneity that are made possible through the use I-squared test and chi-square test and are essential in establishing whether the reported results are consequences of chance or true effect. The funnel plot is the other tool that can be used to determine the quality of the outcome in the meta-analysis conducted and the method aids in capturing the reliability and effectiveness of interventions (Rodseth, & Marais, 2016). Therefore, it is proper to argue that the data from the meta-analysis would be used in the DNP change project. The data provided is significant since the study found the use of a safety checklist in surgery results in reduced occurrences of complications post-surgery. Such data offer substantial insight on how IR safety checklist has the potential of reducing wrong procedures and case cancellation that are the main areas of focus in the DNP change project.

**References**

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