Evidence-Based Practice

Edifices of Evidence: The Proliferation of Pyramids

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Once, history books told us that the great Egyptian pyramids were built by slaves. More recently, however, according to National Geographic Magazine (Egypt: Secrets of the Ancient World, 2010), the builders of the pyramids were Egyptians who lived in villages overseen by the pharaohs. Some were employed as builders and others were compelled to serve for a limited time. Pyramids served as burial chambers. But more than that, they were tombs built to safeguard the soul of the Pharaoh or King. "Ancient Egyptians believed that when the pharaoh died, he became Osiris, king of the dead" (p. 1).

I have been thinking a lot these days about how the notion of levels of evidence (LOE) has developed, and gained almost a religious sanctity in some circles. The evidence-based practice (EBP) movement has led to a proliferation of evidence pyramids (see Figure 1 for an example). Are we building these edifices to deify the evidence of research, particularly systematic reviews of quantitative evidence? Are some researchers, particularly in the fields of medicine, nursing and, more recently, other health professions searching for a "God of Evidence" to put their unquestioning faith in? Others in these professions, particularly medicine, still believe the RCT is the top level of evidence on the pyramid – the almighty vehicle of truth.

Currently, I am in the throes of writing a chapter on EBP for a major, medical-surgical textbook for undergraduate nursing students. The editors are attempting admirably to not only include a chapter on EBP, but to carry the theme of LOE throughout the textbook, citing the LOE for various types of evidence that authors' use to support practice recommendations. When I first sent the editors the quantitative pyramid I had been using to identify LOE to use

throughout the book, one of them raised a very good question: Where do multi-center randomized controlled trials fit into the pyramidal hierarchy? Why would these not be considered top level evidence for an appropriate quantitative question in addition to systematic reviews of randomized controlled trials? I gave that question a lot of thought and came to the conclusion (my own opinion and so a very low LOE) that multi-center RCT's should definitely be considered in the top tier of evidence. Why? Many published systematic reviews combine only two or three similar studies in a meta-analysis. Also, many reviews reach the conclusion that no clear direction for practice can be reached for a number of reasons, including the heterogeneity of studies reviewed and the poor quality of others. One of the reasons for poor quality may be the sample size. Let us say as an example then that there is a systematic review of a new therapy that contains only 3 RCT's, each with a sample size of 150 patients. Although these studies may be well designed and decided on the sample size using a power analysis, these studies together include only 450 participants. Now, consider a large multi-center trial studying the effectiveness of the same therapy, which has a sample size of 3500 across several ethnic groups and across several geographic settings. Which one of the gods would you have more faith in? Which one of these two types of evidence would you have more confidence in as a clinical practitioner or health care administrator?

Going back to the analogy of the evidence gods and what I believe has become the religious nature of evidence, I am thinking that maybe there can be more than one god or one evidence religion. Or for those of you who are not religiously inclined, there can be more than one political system. Both are major principles of the United States Constitution.

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