

# The ABC's of Empirical Evidence

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Early morning at 4:30 a.m., the outdoor chill was a drastic contrast to the morning warmth in the past couple months. Even the big lawn in front of the dorm was brightly lit. As I looked up, I observed the big full moon hanging high in the sky. The snails resting on the brick trail also seemed to enjoy the beautiful moonlight and savored the moment, without fear of early risers' careless feet. I thought to myself, "When would I be able to see such a beautiful scene again?" When I shared this experience with my hospital colleagues, they were skeptical. Having had heat wave warnings and reports of casualties for days, they simply could not relate to the "chill" that I had described.

The 24 Chinese solar terms, Lichun (spring), Yushui (rain), and Jingzhe (insects awakening) to Dongzhi (winter solstice), Xiaohan (small chill), and Dahan (great chill), are the result from ancient Chinese wisdom. Between August 22<sup>nd</sup> and 24<sup>th</sup> comes the "Chu shu", of which "Chu" means "stop" or "end." This means that summer heat officially ends on this day and fall thus begins. The term "Chu-shu" explains the chilliness at dawn during the transition from summer to fall. This once again demonstrates the ancient Chinese wisdom based upon life experience; and that the solar terms concepts are still true to this day.

In recent years evidence-based care is increasingly emphasized in clinical practice. Many hospitals have earnestly groomed their personnel to advance evidence-based nursing care. Through empirical nursing education and training, the discrepancy between empirical evidence and clinical applications is also getting more scrutiny. Can tap water be used in cleaning wounds? Does listening to Mozart make one smarter? Some European research shows no difference in wound infection rate between tap water cleaning and saline cleaning. Studies also exist that demonstrates the Mozart effect – that listening to Mozart's music does

make a person smarter. However, under what kind of study design, and for what age group is the Mozart effect valid? As evidence-based medicine and nursing education rise to higher standards, it has become common for many frontline nurses to use empirical evidence. Upon learning that European researchers demonstrated the usability of tap water to clean wounds, nurses are able to realize that the difference between the cleanliness of tap water from different countries and the location of the wound can cause very different results.

There is a hierarchy in empirical evidence, which can be classified as ABC three levels or five levels, depending on how it is classified. However, the most reliable classification is obviously the one that results from a meticulous scientific research design. For example, the credibility of expert opinions and qualitative studies appears weak when compared with the duplicability of research results to “Class A” evidence based upon meta-analysis.

Evidence-based treatment (EBT) emphasizes that all EBT patients’ care passes stringent scientific scrutiny. However, human beings are a complex emotional animal, and quantitative clinical tests cannot exactly describe a human’s complex mental activities. Both quantitative and qualitative study methods have their pros and cons. Moreover, modern society is full of contention and bias. Therefore, in order to describe a complex entity or a social phenomenon accurately and uncover multi-faceted reality, data collection and analysis of various aspects is necessary. By combining quantitative and qualitative methods, variances from the results can be minimized.

Human behavior is often used as an indicator when observing and collecting patients’ data, and therefore they are used extensively in the nursing process. Yet humans are complex and advanced emotional beings, and behavior sometimes could be intentionally acted, or could be just a thoughtless reflex reaction. Observing behavior alone can sometimes result in misinterpretation. To reduce misinformation, in-depth interview and scientific verification is important. Otherwise, one can miss the target by inches, yet the results can be miles off. Before reaching a conclusion, consider whether what one actually “sees” is the overall picture and other language signals so that the evaluation would not be biased.

The inside angles of a triangle total 180 degrees. If a person does not

allow room for different opinions, then it is like limiting the view to only 180 degrees. In ancient China, people celebrated newborn babies differently according to gender. Without understanding the historical and cultural background, it appears that boys are more preferable than girls based upon some literal signs, contrary to the social value of gender equality.

By studying a phenomenon through observation and using multifaceted strategies to collect data are prerequisites for proper interpretation and evaluation. Without real life interaction, one cannot discover the truth behind the apparent information, not to mention clarifying the accuracy and rationale of the collected data. Although through research we know knowledge can become obsolete after a few years, we indeed need to continue learning for better discernment of current findings.

At 1:00 p.m. on a Sunday afternoon, the searing heat from the sizzling sun has not faded even though it is the early fall season. The temperature is about 30°C in the living room but I feel chill because of the sea breeze coming from the direction of the Seven Stars Lake. It is the end of the summer vacation but the same 30°C room temperature feels different. Ancient Chinese portrays the early fall like a tiger which means the temperate weather during early fall could turn as fiercely hot as in the summer time. This supports the “Class A” empirical evidence which is the accumulation of our ancestors’ precious experience.

**Evidence-based nursing is more and more emphasized in clinical practice, school education shall cultivate students the truth that nursing is science and art.**

