To the Editor:

Thank you for focusing on statistics education in the April 2014 issue of the Journal of Nursing Education. However, as a member of the editorial board for the Journal of Nursing Education and a Doctor of Nursing Practice (DNP) educator, I am concerned that this special issue failed to include a discussion on analytic statistics. Although the featured articles discuss the specific differences in levels and types of statistical education for nurses, no mention is made of the differences between enumerative statistics and analytic statistics. In fact, I often find that few nursing faculty understand the difference between analytic statistics and enumerative statistics, and they thus fail to teach this important content to nursing students.

My personal introduction to the differences between analytic and enumerative statistics occurred only when I was assigned to teach quality improvement science, and I immersed myself in the science and the statistics used to improve our health care systems. My introduction occurred through the Institute for Health care Improvement (IHI), where I engaged in courses designed to help students learn from data for improvement, specifically by taking courses offered by Lloyd Provost and Sandra K. Murray, who were senior fellows at the IHI (Langley et al., 2009; Provost & Murray, 2011). I subsequently had the opportunity to work with and learn from improvement scientists connected with Associates in Process Improvement, which has greatly improved my capacity for teaching this important statistics content. Associates in Process Improvement experts have written some of the leading textbooks related to the science of improvement and the importance of learning from data for improvement.

W. Edward Deming—the father of quality improvement—specifically differentiates between enumerative research/statistics and analytic research/statistics. Deming classified knowledge gained through the use of data into either an enumerative study or an analytic study (Langley et al., 2009). This differentiation is helpful in understanding the differences between statistical analyses used in enumerative and analytic research. Deming partnered with renowned scientist Walter Shewhart in the 1930s to further develop analytic statistics, statistical process control, and the importance of control charts.

The articles published in the Journal’s special issue focused on statistics in nursing education makes no mention of these two different types of research, nor does it mention analytic research and the associated statistical methods (i.e., statistical process control). All nursing students, from baccalaureate to DNP to Doctor of Philosophy programs, need to understand the difference between these two types of research and associated statistics. Currently, most nursing education programs focus only on the enumerative research/statistical process method; as a result, few students graduate with an understanding of analytic research/statistics. This omission in the nursing curricula leaves graduates to enter and lead in workplaces where they do not have the research and statistical skills to effectively engage in improvement work. All students should graduate with a basic understanding of analytic statistics, statistical process control, and the basic ability to understand and learn from run charts and Shewhart control charts.

I recommend that faculty interested in teaching this content attend IHI special courses, which are offered annually and focus on understanding analytic statistics and improvement sciences. Two texts that my university recommends and uses in our DNP courses to cover this content include The Improvement Guide: A Practical Approach to Enhancing Organizational Performance (Langley et al., 2009) and The Health Care Data Guide: Learning From Data for Improvement (Provost & Murray, 2011).

I look forward to the future publication of articles focusing on analytic research and statistics in the Journal of Nursing Education.

References


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