

Evidence-Based Practice: Science or Science Fiction

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Traditionally, ‘research-based’ and ‘evidence-based’ have been used interchangeably in Extension, as it is in many fields focused on program implementation and evaluation. It is not uncommon for those on more of the applied side of program delivery to use the terms interchangeably, while those on the research or program evaluation use the terms separately.

These terms are used separately to indicate different phases, so to speak, of determining the efficacy and effectiveness of a program on specific outcomes (e.g., increase in physical activity or fruit/vegetable intake, reduce in HbA1C, etc.).

The separation is also largely influenced by the push for ‘evidence-based practice’, which is made up of (1) clinician/practitioner expertise, (2) patient/client values, and (3) the best external evidence. In other words, practitioners and their programs should strive to be evidence-based, not simply research-based.

Thus, we can separate the two types of programs in this way:

- **Research-based Program:** A program that is grounded in theory, science, ideas and/or guidelines that were formulated through research inquiry and methods, but has not been directly tested as efficacious or effective as a program on outcomes and in populations of interest.
- **Evidence-based Program:** A program that has been rigorously tested with research (commonly third parties to limit bias) for both efficacy and effectiveness.
 - **Efficacy:** The program is tested under ideal conditions in comparison to a control group, where external factors are controlled for through a stringent and rigorous research methodology.
 - **Effectiveness:** The program is tested under real-world conditions, but still with a stringent research methodology.

In other words, just because a program worked under ideal conditions with a specific sample of people, with self-selected teachers, given at the same time of day in a particular county, while diet and other factors were controlled for (thus has ‘efficacy’), does not mean that the program is ‘effective’ (going to work the same way) in a different county, with different teachers, in a different population, etc.

In addition, claiming a program is ‘evidence-based’ does not mandate that it is efficacious or effective. There are many programs that have ‘evidence’ to support that they either do not work or only work to a limited extent. We just need to be honest in relaying what programs can and cannot do.

Thus, program development is seen as a process of starting with a strong theoretical and research-based program, and then moving the program through rigorous ‘efficacy’ and ‘effectiveness’ trials to confirm its ability to produce the outcomes of interest. This process is challenging and requires a strong team of collaborators to move a program through the process, as well as monitoring that a program delivered across multiple counties or states is done with ‘fidelity’ (sticking to the delivery methods in the efficacy/effectiveness research), yet allowing for ‘fit’ in the various settings, populations, teaching styles or other factors that vary county-to-county or state-to-state.