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When are research findings ready for use?

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Four Common Strategies

Some people are too eager to use the results of research. A new drug is demonstrated to keep mice from gaining weight and many people want to try it. A new program shows some problem drinkers are able to drink moderately and some believe total abstinence is now an out-of-date treatment approach for alcoholism.

At the other extreme are those who ignore all reported research results because they think it is only a matter of time before researchers will report a study with opposite findings. They conclude research should rarely, if ever, be used; common sense and experience are better.

When are research findings ready for use? Although there are no hard and fast rules, guidelines for research review, synthesis and utilization are emerging.

A system developed by the Agency for Health Care Policy and Research (AHCPR) evaluates each individual study as well as the research base, i.e., the entire collection of studies. For the research base to be rated as high quality, there must be many well-designed studies yielding consistent results (Jacox, Carr, Payne, et al., 1994). Although research can never be used to dictate exactly what to do in practice, trustworthy scientific guidelines can be developed if we have an adequate number of studies. Thus, replication of research is very important.

There are many different approaches to the replication of research. Four replication strategies are described often in the literature and seem relevant to nursing's attempts to develop dependable research bases from which practice guidelines can be drawn. (Beck, 1994; Blomquist, 1986; Haller & Reynolds, 1986; Reynolds & Haller 1986).

Literal replication is the exact duplication of a study. It is sometimes called "identical replication." The original researcher's selection of subjects, data collection procedures and statistical analyses are followed precisely. This type of replication lets us know if the same study done the same way with a new but comparable sample would give the same results. Literal replications are a good place to start for those with little experience in conducting clinical research because the first study serves as a guide on how to do each step of the research project, while the information generated has immediate utility for further development of the research base.

Operational replication, sometimes called "virtual replication," differs from literal replication in that only the methods for selection of subjects and delivery of an intervention or experimental procedure are duplicated precisely. There may be different data collection procedures and data may be analyzed differently. This type of replication has the same potential for adding to the research base, but requires more experience or more available consultation to select or develop new measurement and analysis strategies.

Concurrent replication is a strategy gaining popularity in nursing. Multi-site studies are concurrent replications. Rather than wait for confirmation from both the original study and its literal replication(s) are collected simultaneously. This type of replication allows nurses from many settings to conduct important studies without having to develop independently each step of the research project. This across-setting collaboration is a good use of scarce resources such as clinical research purses' time and energy. One consultant also can be shared by the staff in the settings involved.

Constructive replications focus on testing the relationships found by an earlier investigator, but testing them in a new way. Duplicate methods are purposely avoided in order to determine if the same relationship among concepts will be found despite variation in the design, sampling and/or measurement strategies used. Constructive replication studies are an important contribution to practice disciplines because it is especially important to have confidence that conceptual relationships exist and are not just a result of the methods employed to study them. Constructive replications are more difficult for the novice researcher because only the problem identified by the original researcher is used. New methods must be developed, so much of the same work necessary for original research is required with constructive replications.

Why not consider a replication the next time you think about a clinical research project? As you search the literature, you may find: (a) nothing to replicate on your clinical topic (a good reason to do some original research!), (b) so many studies that integration of the research base should be attempted rather than another study on the same topic, or (c) a few good studies -- just waiting for replication.