From Science to Practice: Bridging the Gap with Translational Research

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In introductory courses on research methodology, basic and applied psychological research is often dichotomized. Recently however, researchers at all levels of academia, as well as public and private research institutes, have been turning to translational research in an effort to bridge the gap between laboratory and clinic. Translational research involves literally translating basic research findings to applied settings — practice informed by science. This approach is by no means a new idea. Translational medicine became popular in the mid-to-late-twentieth century as advances in “bench” research informed medical science, a relationship that has been strengthened in recent years by the advent of new technology in biomedical research (Ioannidis, 2004). The evidence-based practice movement in behavioral healthcare has led to a renewed emphasis on developing, testing, and implementing treatment modalities with the best available empirical support. While clinical outcome studies can provide information about the overall efficacy of a treatment package, they provide little information about the mechanisms of therapeutic change. Dismantling and additive research studies, which look at the contribution of individual components, are clearly needed to inform treatment innovation (Lerman, 2003).

Scientists often think of translational research as moving in one direction, specifically that basic research from the lab should be translated into clinically applied studies. However, translational research can also work in the other direction: Basic researchers can examine the components of multi-faceted treatment programs in the laboratory under controlled conditions with high internal validity to investigate and isolate specific methods that are responsible for meaningful clinical improvement. Translational research can help identify not only what works in psychotherapy, but also how it produces beneficial results. While this process of bringing treatment into the lab may encounter criticism regarding ecological validity, the goal is to identify and understand the underlying mechanisms of action. These findings are critical to refining and implementing treatment protocols, and translational studies can serve as precursors to the development of new therapeutic tools as well.

Too often, students interested in applied fields of psychology avoid becoming involved in basic research. For the modern student of clinical psychology, the benefits of involvement in a full spectrum of translational research, from laboratory to clinical practice, are numerous. Experience and training in laboratory research provides a basic foundation in the principles of experimental design. Students from other areas of psychology such as cognition, neurobiology, and social psychology can also become involved in interdisciplinary translational projects that tap their expertise. Undergraduates strengthen their competitiveness for graduate school when they have some experience in conducting laboratory studies and graduate students also benefit from balanced training conducting both lab-based and applied research.

For students interested in treatment development, translational research can jump start their career. Whereas outcome studies can often be too time and labor intensive for theses or dissertations, laboratory-
based studies aimed at uncovering clinically relevant phenomena can enable a student to contribute actionable information to the field. This can serve as the basis for later work on applied studies, or as the beginning of a program of translational research since many students and professionals may choose to remain in this growing area. The ever expanding need for research that supports the growing treatment literature will enable translational psychological scientists to stay on the cutting edge of the field for years to come.

With all the benefits and opportunities available for translational researchers, it is easy to see why new generations of scientists are finding this middle ground between basic science and applied psychology so appealing: Translational research further enables the modern field of psychology to move toward the goal of a science-first discipline. Interested students should first be knowledgeable on the treatment literature in the area of interest. Translational research is certainly different than treatment outcome studies, but the two are inevitably linked. Finding a gap in the literature for a potential study should not be too arduous, as many newer treatment protocols are emerging within the literature that need more investigation. The odds are good that a student can find an opening that is tailored to his or her interests.

The development of laboratory procedures for translational studies can be time consuming, but yields information that is well worth the work. The creation and presentation of laboratory analogues can appear daunting; fortunately, existing studies have used established and workable procedures. Measurement in such studies runs the gamut from simple pen-and-paper assessment to sophisticated psychophysiological methods. It is very common to find examples of studies employing a wide variety of measurement strategies (including combinations of several methods) in any given area of the translational literature.

Researchers who have undertaken such studies are likely to find a good reception for their results. Translational studies can be found in therapy journals, as well as those geared toward more basic research. Posters and symposia in this area are presented at regional and national conferences. Funding availability in this area is also growing as government and private organizations are paying more attention to the importance of translational research. The National Institutes of Health identified increasing translational research in all areas of healthcare as a goal, and its component institutes are providing funding for translational projects on mental health, alcohol and drug misuse, and neurological disorders. Most of these programs have funding opportunities available for professional researchers, post-docs, and graduate students interested in conducting translational studies. Students wanting to become involved in this area can look to one of a number of graduate programs in psychology that have labs dedicated to conducting translational studies, as well as research institutes offering pre- and post-doctoral training in this area of the field.

Whether testing components of an evidence-based treatment package in a lab setting or investigating the underlying mechanisms of therapeutic action, translational researchers have carved out a unique and important niche between the boundaries of basic and applied science, furthering psychology as a science in the service of the common good.

References
Lerman, D. C. (2003). From the laboratory to community: Translational research in behavior analysis.