Integrating Evidence into Practice

by Dana Scully

Evidence-based practices integrate the best available research with clinical observations and patient wants and needs. While clinical observations and patient wants and needs are part and parcel of everyday practice, integrating research can take some getting used to. Dana Scully shows us how …

In order to integrate research effectively into our practices, a basic understanding of research methodologies is necessary. There are three types of research methodologies: qualitative, quantitative, and mixed methods. Each has benefits and disadvantages.

Quantitative Research

Quantitative research has clear boundaries: it uses clear and familiar measurements, is often applied to large sample sizes, and is easily replicable. The researcher begins with a clearly defined question usually comparing one variable to another, asking where, what, and when. Data is measured, often before and always after the intervention. Outcomes are in a numerical form measuring quantity, intensity, and/or frequency. Meta-analysis, random controlled trials (RCTs), and surveys are examples of quantitative research.

Quantitative research, with its precise measures and replicable outcomes, is an essential tool to the allied health professional. Its numerically calculated outcomes enable easy comparison and form the basis of guidelines and protocols used in clinical practice and taught in vocational training centres.

Quantitative research - including meta-analyses and RCTs - is considered to generate the highest level of evidence reliability, but the large sample sizes may limit the usefulness of this type of research for our field.

While the rigid design of quantitative research aids its generalisability, reliability, and replicability, it does not allow for nuanced interpretation or even extrapolation into real world settings.

Quantitative Research Method Example

A study by Faleiros and de Paula (2012, 836-842) examined intestinal re-education using massage in 50 quadriplegic cerebral palsy patients. Among the variables studied was the use of daily laxatives compared to massage intervention. The results suggested that non-drug interventions - including massage - should be considered as a first line treatment for quadriplegic cerebral palsy patients suffering from constipation.

Qualitative Research

Qualitative research evaluates qualities or processes, often has small sample sizes, and is not easily replicable. This type of method is employed in the social sciences to examine social constructs and relationships. Data (in the form of responses to interviews and open-ended questionnaires) reflects observations of or self-analyses about a subject's experiences and/or perspectives. Grounded theory and case studies are examples of qualitative research. Case studies are, as the name suggests, studies of particular cases (patients or diseases) that a therapist has treated over a period of time. Grounded theory is, essentially, research in reverse. Data is examined for possible connections or cause-effect relations and a theory is generated on the basis of hypothesised connections or relationships which can be validated by additional research.

Qualitative research is sometimes used as the basis of quantitative research, especially when little is known or able to be numerically measured.

Its small sample sizes and interpretability allows the health professional to extrapolate possible outcomes, incorporating them into real world settings.

Qualitative research also has its pros and cons. The rich descriptions used in qualitative research allow for a more realistic view of a subject's experiences and facilitate flexibility in the components of research design, collection, analysis, and interpretation. But this flexibility may come at a cost: replicability and reliability may be an issue if any one or more of the components are faulty.

Qualitative Research Method Example

In Porcino, Boon, Page, and Verhoef's article (2013, 15-24), the authors investigated massage therapists' practice. Researchers conducted in-depth interviews to extrapolate practice details. The results of the interviews suggested that therapy is individualised and evolutionary, a finding that may be helpful in designing future training programs.

Mixed Methods

Mixed methods research is, as its name suggests, a mix of quantitative and qualitative methods. Mixed methods research tends not to randomise subjects and, for that reason, is also known as quasi-experimental research.

Mixed methods research amalgamates "…*how many* people feel, do or think a certain way…" with "…*how* people do, feel, and think, or *why* people do so" (Kania, Porcino, & Verhoef, 2008). It's particularly suited to massage therapy research, which is both medically and socially conceptualised.

Mixed methodology research may appear to be the best type of research but, once again, this method has its drawbacks. It is constrained by the same errors and benefits as the two methods it combines.

Mixed Methods Research Example

In a combined methods study, Porcino, Boon, Page, and Verhoef (2011) examined how massage therapy is unique and individualised, given practitioners' varied experiences. Both quantitative (population based surveys) and qualitative (practitioner interviews) were used in this study.

Practical Integration

Depending on the issue you wish to explore, once you understand the strengths and weaknesses of the various methodologies, you can incorporate the findings from relevant studies - whether based on a large RCT or a small cohort - with your own clinical observations and with your client's wants and needs to form an evidence-based practice care plan. With a little understanding and a bit of practise, integrating research into everyday practice is within reach. Below are six easy steps toward an evidence-based practice:

Six Steps of an Evidence-Based Practice

1. Define the clinical question

According to Australia's National Health and Medical Research Council (NHMRC), deciding what you need to know is the first step in integrating research into everyday practice. You can use your client's history, wants/needs, and examination findings to define an issue that needs addressing.

2. Build a knowledge base

Refresh your understanding of the pathophysiology by consulting secondary research material, eg textbooks and scholarly articles.

3. Search for primary evidence

Search PubMed, the Cochrane Library, and other health databases for first-tier evidence. Include the relevant type of research, eg qualitative, quantitative, and/or mixed methods.

4. Assess the information for applicability and transferability

Once the research has been read, assess its applicability and transferability. Can the research be applied to the individual client with the same benefit as was experienced by the studied group and can individual differences alter your treatment outcomes?

5. Create and apply a care plan amalgamating the researched information with your clinical experience and client's wants and needs

This is sometimes referred to as the 'evidence funnel'. Information from many sources, including your own clinical observations, client wants and needs, and research are amalgamated into an individualised care plan.

6. Evaluate and reform the care plan

Evaluation of results is a continual process. Evaluate the applicability of the care plan before, during, and after each treatment. Is it working or isn't it? Make informed adjustments and reform the care plan. ■amt

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Dana Scully has been a member of the AMT since 2001. She recently completed her Bachelor of Health Science - Complementary Medicine through Charles Sturt University and has been working toward sharing her education with AMT members since. She is passionate about health care and member education.