

Improving Information-Seeking Behaviors and Knowledge Bases for  
Thesis Students in the Applied Behavior Analysis Graduate Program and  
Students in the Rehabilitation and Mental Health Counseling Graduate Program

### **Topic 9: Interventions: Finding Empirical and Clinical Research**

Into the life of every researcher falls the search for empirical studies. This video will provide a framework for understanding how empirical (clinical) research is defined and describe search strategies for searching for empirical studies in PsycINFO and PubMed.

Empirical research is defined as research that derives its data by means of direct observation or experiment. Empirical research begins with a hypothesis, or a question to be answered, independent variables, and dependent variables.

There are 7 criteria for empirical research:

1. Randomization
2. Control
3. Reliability
4. Validity
5. Implementation of Treatment Variable
6. Analysis Issues
7. Interpretation Issues

Randomization means that subjects are randomly selected from a population and randomly assigned to a treatment. This avoids the perception of "stacking the deck" to ensure a preconceived answer to the hypothesis.

Control is the reduction of the impact of extraneous events on the study, reducing variation of certain factors within the study participants, increasing the likelihood of detecting an effect, and reducing uncertainty.

Reliability and validity address measurement error and the ability to make logical inferences from the measure.

Implementation of Treatment Variable provides evidence that the independent variable of interest has actually been applied as intended.

Analysis Issues and Interpretation Issues address how the study was analyzed and interpreted. If an analysis was conducted inappropriately, such as using the wrong unit of analysis, the interpretation of the results may be misleading or incorrect.

A literature review is performed to establish the importance of the issue, to see what research has been done (or not done), to understand the conclusions of other researchers, and to examine methodologies used in other research studies. Often a meta-analysis is also conducted, which rigorously examines the methods used in a number of similar studies to determine the efficacy of the study.

We will now look at some important resources, PsycINFO, MEDLINE, and PubMed, and strategies in locating empirical studies.

Using the OVID interface for PsycINFO, let's start with the topic 'self-injurious behavior', mapping the term to the subject heading. We map to subject headings to target articles whose subject, that is, focus, is self-injurious behavior, and not just a phrase in the abstract.

Selecting the record for the 2009 article on "Co-occurrence of self-reported disordered eating and self-harm in UK university students," we click on the link to the Complete Reference.

Scroll down the record and we see, in the section entitled "Methodology", the article is classed as an empirical, quantitative study. We also see the names of the two measures used in the study.

The "Methodology" field is our clue that there are many ways we can access research studies by using the Limits feature in our search.

We go back to our main search page and click on the box entitled "Additional Limits".

Scroll down to the box entitled "Methodology".

This section contains all the different types of methodologies that APA uses to describe the conducting of research. You can choose the more general term "Empirical Study", or look for study types similar to the study you are designing, such as clinical case study or treatment outcome/randomized clinical trial. You may also use this Limit to refine your search to qualitative or quantitative studies.

Now if we change databases to MEDLINE and re-run our search, we have over 44,000 articles on "Self Injurious Behavior". The Methodology terms we selected in PsycINFO do not work in MEDLINE. Let's click on "Additional Limits."

In MEDLINE, there is no Limit entitled Methodology. However, there is a section entitled "Publication Types" that includes "Clinical Trial, All", "Comparative Study", "Controlled Clinical Trial", "Multicenter Study", "Randomized Controlled Trial", "Twin Study", and "Validation Studies." Depending upon your intended research question, any of these may be applicable.

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Let's highlight "Clinical Trial, All" and "Randomized Controlled Trial" using the Control key to select more than one choice and select search #1 "self injurious behavior."

We now retrieved over 900 articles that are clinical trials. If we look at the complete reference record of the article "Mobile crisis team intervention to enhance linkage of discharged suicidal emergency department patients to outpatient psychiatric services: a randomized controlled trial", we see the **type** of measures used and the titles of some of the measures listed in the MeSH Subject headings. The type of measure is important to locate similar types of measures, if the actual measure used does not suit your research design.

In the section entitled "Publication Type", we see this is also a Randomized Controlled Trial, and an NIH funded study.

In PubMed, Select MeSH from the dropdown box and type in the phrase "self injurious behavior." Click on "Limits"

See the section entitled "Type of Article". Click on "Clinical Trial", "Randomized Controlled Trial", and "Controlled Clinical Trial".

Then click "Search". Over 900 records are retrieved. Let's look at "The effectiveness of a web-based self-help intervention to reduce suicidal thoughts: a randomized controlled trial." To see the MeSH headings and other information, click on "Display Settings", select MEDLINE, and click "Apply".

Here, the type of study is found in the abbreviated heading PT (publication type) and the type of measure used.

Another good term is "Research Design" which is indexed with articles that describe how data are collected and utilized.

Combing those two terms together with our previous Limits set to "Clinical Trial", "Randomized Controlled Trial", and "Controlled Clinical Trial" retrieves over 100 records that describe in detail planned studies addressing self-injurious behavior, including the type, such as a randomized controlled trial, the type of intervention used, cognitive-behavioral therapy, measures to be used, Beck Scale for Suicidal Ideation and a self-report questionnaire, identified outcome measures, and limitations and strengths of the study.

Another combination search is "self injurious behavior" AND "methods" which also will retrieve articles describing methodological studies and procedures.

This same search strategy works in MEDLINE.

We hope this quick video has shown you how to search for empirical studies across these three databases.

To learn how to more effectively search in PsycINFO, MEDLINE, or PubMed, we suggest making an appointment with us so we can show you other tips and tools.

Contact us at [fmhlibrary@usf.edu](mailto:fmhlibrary@usf.edu).

#### CREDITS

Campbell, D. T. & Stanley, J. C. (1963). *Experimental and Quasi-Experimental Designs for Research*. Chicago: Rand McNally.

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