RESEARCH REFLECTIONS
Making sense of the quality of evidence

by Krista L. Wilkins

In the last CONJ issue, the Research Reflections column focused on finding research to answer patient’s questions (Stacey et al., 2015). When you have found some research studies that might inform your practice, the next step is to look critically at those studies to discern the best available evidence so your practice is informed by the best of the best available information. The best evidence to integrate into decision-making for evidence-informed nursing practice includes research evidence, clinical expertise, and patients’ choices and concerns (Wilkins, 2013).

Critical appraisal is a systematic method of evaluating the strengths and limitations of a research study, as well as its applicability to practice. A common assumption is, “It’s in a journal. Isn’t that enough?” The answer is, “No, not really.” Publication in a journal, even when peer-reviewed, does not guarantee quality or clinical relevance. How can you tell whether a research study has been done well and the information is reliable and relevant to your practice? How can you decide what to believe when research on the same topic has contradictory results? This is where critical appraisal skills can help.

Critical appraisal may sound daunting. However, you do this every day to some extent. Whether you are reading the newspaper, using social media or watching television, you process what you read, see, and learn through your experiences. You are wise consumers of the information, filtering it so you focus on what is important. You critically analyze claims made; you do not take everything at face value. You need to do the same thing when you critically appraise research studies.

So what is it you are critically appraising? You are appraising the quality of a research study, and whether or not the results can be applied to your own clinical situation. The three major questions to answer in doing a critical appraisal are:
1. Are the results of the study valid?
2. What are the results?
3. Will the results help me in caring for my patients?

The first question addresses the validity of the study results—did the researcher use the best possible methods to obtain the study results? Validity is important because if oncology nurses want to inform their practice by research, they need to be able to trust the conclusions made by researchers. Research is believable and credible when rigorous methods have been used. For many nurses, the terminology used in describing the research methods can be difficult to understand and make critical appraisal even more daunting. Consult a glossary of common research terminology when you see an unfamiliar word. A glossary of common research terminology can be found in any introductory research textbook or on the Internet (e.g., Centre for Evidence Based Medicine).

The second question addresses the results of the study—are the results statistically significant or might they have occurred by chance? Would similar results be expected if oncology nurses implemented the intervention in their own practice? You do not need to be an expert statistician to evaluate the results; you only need to be able to understand what a statistical test means clinically. You can refer to any introductory statistics textbook or post a question to CANO/ACIO online community through the Sosido Network to find an explanation for a statistical test with which you are not familiar.

The third question addresses the applicability of the study to your practice area—were the results found in a population similar to my patients? Are the benefits greater than the harms? This question is important, because you can easily get caught up in the details of the research methods and results, and forget about how they apply to real patients.

How do I answer these questions? I recommend using a rapid critical appraisal checklist, such as the Critical Appraisal Skills Programme (CASP) checklists, to evaluate a research study. These checklists are free to download. Sit down with the research study and checklist, and work through the questions on the checklist. Most checklists will have specific sub-questions about what is a well-conducted research study for the research design you are critically appraising (e.g., randomized control trial, cohort study, qualitative study). You might not be able to answer some of the questions on the checklist, which is alright. Just look at the research study as objectively as you can, and a useful evaluation of the study will start to emerge. Remember, there is no perfect research study; all research has limitations. As you become more familiar with the process, you will be better able to discern studies with minor limitations that can still be used to inform practice (especially when considered in the context of other research studies) from those studies that provide no useful information at all.

There are a few things you can do to develop your critical appraisal skills. Journal clubs are a good way to practise critical appraisal in a collegial setting. A journal club is a group of individuals who meet regularly either face-to-face or online to critically appraise research studies. Through this collaborative effort, you
can improve your understanding of research methods and keep informed of developments relevant to your practice.

Another way to increase your skill level is reading pre-appraised sources. Pre-appraised sources can help you identify the questions you should be asking when you are critically appraising a study. The evidence summaries found in library databases (e.g., Evidence-Based Care Sheets found in CINAHL) are examples of pre-appraised sources of evidence on a clinical topic, usually carried out by experts and intended for point of care use. Another pre-appraised source of evidence is journals that take research published elsewhere, and summarize and provide expert commentary on that research (e.g., Evidence-Based Nursing).

You can also work on developing your critical appraisal skills by accessing a series of free online learning modules created by the National Collaborating Centre for Methods and Tools (NCCMT) from McMaster University. The modules include interactive online activities to practise critical appraisal skills. Although the focus of these modules is public health, the critical appraisal skills you will learn are transferable to any health care field including oncology nursing. You can work on the modules either individually or as part of a group. The NCCMT modules can be done at your own pace; you can log in whenever it’s convenient for you, stop whenever you have to, and continue where you left off. You can also earn a certificate of completion for each module that you can include in your portfolio.

An important message to take away from reading this Research Reflections column is that critical appraisal is a skill you can develop with practice. You are not expected to know everything about critical appraisal. You do not need to be an expert in research or statistics to do critical appraisal in a meaningful way. You just need to be able to find the tools to do the critical appraisal and discuss the results with colleagues.

REFERENCES