Maryna Hura presents the second of two articles looking at evidence-based practice

CPD PART 8

Evidence-based practice Part 2

In the last issue, we focused our attention on exploring the concept of evidence-based practice and placing it within the context of ophthalmic dispensing. In this article, we will consider the means of conducting effective research and finding relevant evidence to support our practice.

It is unlikely that, having read this article, optical practitioners would suddenly turn into committed scholars and bury themselves under volumes of books and research journals. However, we hope to at least ignite a spark of curiosity, awaken optical professionals' inner researchers and encourage them to seek answers to scientific questions associated with working in an optical field, using evidence-based practice.

NEED FOR RESEARCH

It is all too easy to adopt a philosophy of "we have always done it this way" and "if something worked before, it will work again". However, discussion papers, editorials and expert opinion are not necessarily informed by strong evidence. In many areas of healthcare, including ophthalmic dispensing and optometry, the professionals should, whenever possible, underpin their practice with research evidence, rather than anecdotal evidence.

For example, a patient asked you to explain the benefits of blue light blocking lenses in more detail. The only information about their effectiveness that you could find originated from an article sponsored by a spectacle lens manufacturer and published on their website. How reliable could this information be? The evidence would likely be anecdotal or biased in its nature, unless the lens supplier's claims about the effectiveness of their product were supported by a randomised controlled trial[1].

The need to move from anecdotal to research evidence is also apparent in other fields of expertise. For instance, if a dog owner wanted to stop their feisty pet from pulling on the lead, they could purchase a range of choker collars and see which one the dog responded to the best through trial and error. However, when training hundreds of dogs at a Guide Dogs training centre, such an approach would not be sufficient due to the important role of the dogs, time constraints and cost implications. The recipient of a guide dog would want to know that the choice of lead, which was used to effectively train the animal, was based on robust evidence[1].

UNDERSTANDING RESEARCH

Research literature can be generally divided into primary and secondary types, with each having its advantages and disadvantages. Primary research includes clinical trials, experiments, tests and surveys. Whilst primary studies may be best when answering a particular question, trying to evaluate the findings of numerous projects can be time consuming. In addition to this, a degree of understanding of statistics and research methods may be required.

To overcome this barrier, the practitioner could turn to secondary literature which summarises and reviews the results of multiple primary research projects[2]. Some of the examples of secondary literature include systematic reviews, narrative reviews and clinical practice guidelines. Aveyard and Sharp[1] state that the purpose of systematic reviews is to '*identify and track down all the available literature on a topic with clear explanations of the approach taken (methodology) [and] should be regarded as a strong form of evidence*' (p.54).

Narrative reviews are principally a summary of findings reflecting current views on a subject, written by a specialist in the field, who may or may not have reviewed literature using a methodical approach[2].

According to Graham[2], clinical guidelines '*integrate evidence from systematic and other reviews to make explicit recommendation on the interventions to be used or the procedures to be followed in practice*' (p.245); these are typically produced by the professional bodies and associations.

Figure 1: Google Scholar[7] contains peer-reviewed academic publications

WHERE TO START?

A starting point of any good research should be a clear understanding of a problem, resulting in formulating an answerable question. This can be achieved by using a framework for developing a question, such as PICOT: patient/population, intervention/issue, comparison/context, outcome and time[1,2].

An example of a clinical PICOT question would be: "Is the use of specialist contact lenses (*intervention*) more effective in slowing down the progression of myopia (*outcome*) than the use of multifocal spectacle lenses (*comparison*) in children (*population*) before the age of 16 (*time*)?"

The next step would be to conduct actual research. Relevant clinical practice guidelines can be found on the websites of associations, professional bodies and health organisations, such as ABDO[3], the General Optical Council (GOC)[4] and the National Institute for Health and Care Excellence (NICE)[5].

The Cochrane Library[6] is another good place to start, since it is an excellent source of independent, systematically produced reviews about efficacy of health care interventions[1,2].

Google Scholar[7] (**Figure 1**) contains peer-reviewed academic publications; if a full text book or an article cannot be accessed free of charge, university and

SEARCH PHRASE	RESULTS
{contact lenses AND myopia control}	Yields approximately 43,000 results
{"contact lenses" AND "myopia control"}	Narrows down the number of hits considerably to approximately 1,980
{children AND "contact lenses" OR "multifocal spectacle lenses" AND "myopia control"}	This more effective search results in approximately 56 hits
(search results accurate on 21 June 2019)	

Table 1: Google Scholar search example

college libraries may allow non-members to use their online catalogues[2].

SEARCHING FOR EVIDENCE

The next challenge would be to retrieve relevant information from the selected databases. A good strategy would be to combine the key terms from the question using inverted commas and operators 'and', 'or' and 'not'[1]. The use of inverted commas ensures that the key terms are searched as a phrase, rather than two independent terms[2].

The operator 'and' ensures that each term is searched for and helps to reduce the number of results; the use of 'or' increases the number of hits since either one key term or another is selected, and 'not' filters out the unwanted searches[1].

The example in **Table 1** shows how smart searching can help refine your results.

QUALITY OF EVIDENCE

With so much information on offer, it is essential to consider whether the content of a web page or an article can be trusted. Strong evidence is more likely to be presented in the publications produced by the credible authors linked to recognisable institutions. It may also be useful to know the authors' qualifications and their level of expertise in the topic area. However, we must not ignore the credibility of the actual sources and look for evidence of editorial or peer review. High quality journals only publish academic papers reviewed by at least one recognised specialist in the relevant subject area[1].

There is a need to establish the currency of research; journal articles always display a publication date, whilst it is not often clear when the web page was last updated. The information should be scrutinised in terms of its relevance, accuracy and impartiality. Critical assessment of the references, included with the publication, could indicate the depth of the study and the degree of bias[2].

Once the evidence is found, it should be regarded objectively to determine how appropriate it is in answering a given research question. For example, a study might be well designed but not be relevant to the question. On the other hand, it might be relevant but not well executed. Alternatively, a discussion or opinion paper might contain an interesting argument, but the quality of the information needs to be assessed further[1].

IMPLEMENTING EVIDENCE IN PRACTICE

Searching for evidence can be seen as both art and science; some practitioners may find the process easy, whilst others may consider it a rather challenging task. There is evidence[2,8] which suggests that less experienced electronic searchers may be more likely to become unfocused or use ineffective techniques whilst exploring online sources and, as a result, undertake repetitive and redundant searching.

Busy lifestyle, work priorities, family commitments, complex to understand literature, too much information, poor quality evidence, fear of challenging the practice of others and organisational culture barriers are only some of the problems one might face when attempting to explore a particular topic[1].

Nevertheless, it is worth bearing in mind that motivation and willingness to learn are amongst other important ingredients of the personal and professional development receipe.

Sceptisism and claims of not having enough time aside, some practitioners may find one or more of the following possible solutions useful in overcoming the barriers mentioned earlier.

Initially, it may be worth explaining to colleagues and family members the importance of continuous professional development and setting aside time once a month. The suggestion of starting work a little earlier or finishing a little later to access workplace resources may not be welcomed by some practitioners. However, given the current availability of electronic devices, a rather simple and obvious solution would be to save research articles on the preferred device to be viewed off-line at a later date.

Finally, some practitioners might like to become involved with the journal clubs or projects that involve working with peers[1].

SUMMARY

We should not underestimate the importance of evidence-based practice within our field of work. Hopefully, this article has provided good reasons why optical professionals should continue their development as life-long learners and consider becoming involved in research.

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In next month's CPD article, Alex Webster will look at 'Educational formats: what works when'.