



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

Evidence-based practice Part 1

The main purpose of this article is to help us explore the meaning of evidence-based practice and its relevance within the context of ophthalmic dispensing.

The concept of evidence-based practice emerged as a result of the scientific developments in the fields of human anatomy, pathology, physiology, microbiology and biochemistry between the 17th and 20th centuries, hence it is often associated with scientific and medical practice. It has been accepted ever since by health practitioners worldwide as a tool for making comprehensive clinical decisions based on the best evidence from current research, together with their expertise and input from patients^{1,2}.

Let us consider the following scenario. A patient comes to see their doctor and reports wheezing, breathlessness, tight chest and coughing. Having considered the duration and frequency of these symptoms, a general practitioner of the 21st century would probably conclude that the patient suffered from asthma and would prescribe an inhaler and possibly steroid tablets as a treatment³. Here, the clinician would have referred to the relevant sources of knowledge and used evidence from previous clinical trials to find an optimum solution to their patient's problem.

However, if a patient complained of respiratory ailments in the 15th century, when the traditional approach to medical treatment was given preference over science, the physician would have most likely used a historically resilient but scientifically unfounded method, such as phlebotomy or bloodletting, which became accepted as a standard treatment for many diseases in the Middle Ages.

Traditional approaches to medicine can be dated back as far as 2,300 years, to the era of humoral doctrine of the Hippocrates and Galen; nonetheless, some of the methods are still used in Western medicine – and a great example of this is the comeback of the leech therapy⁴.



Keeping knowledge up-to-date is essential

DO WE NEED IT IN AN OPTICAL PRACTICE?

Despite some controversy and disagreement surrounding the benefit of evidence-based practice in healthcare, the philosophy of decision making based on evidence has been adopted in recent years in other health fields, such as nursing, physiotherapy, dentistry and optometry, including more distant areas of professional activity, such as education, human resource management and social work⁵. There is proof that an evidence-based approach is appropriate in all aspects of everyday primary eyecare and may be applied by optometrists and dispensing opticians to improve their clinical practice¹.

The importance of evidence-based practice is apparent from the General Optical Council's (GOC) Standards of Practice for Optometrists and Dispensing Opticians (2016)⁶, which state that we need to consider all information provided by our patients, together with any background research which they may have carried out prior to visiting our practice, and explain clearly if the evidence is not relevant or valid (Standard 1.6).

In addition to this, the GOC⁶ recommends that the clinicians should be 'aware of current good practice, taking into account relevant developments in clinical research' and apply this knowledge to ensure that effective patient care is delivered (Standard 5.3) (p.10).

As eyecare practitioners, we recognise

the significance of listening to our patients, making sure that they are at the heart of the decisions made about their care and keeping our knowledge and skills up-to-date⁶. Ultimately, we do not want to settle for an average optical product or service; we want what is best for our patients. How do we then distinguish between the good and the best, and how do we ensure that we provide the most effective care possible? Have we ever stopped to think about the evidence and the science behind the optical solutions we offer our patients? How do we know that these solutions are right for them?

One way to answer these questions is to consider our professional development. The very first day on an ophthalmic dispensing course marked the beginning of our journey as life-long learners and, to some extent, researchers. Now, as fully qualified dispensing opticians, we carry on with our education by attending lectures and workshops, visiting lens and frame manufacturers and poring over CET articles. Hopefully, by continuing on this journey we should accumulate enough knowledge and experience to enable us to challenge existing traditions, as well as new developments, within the optical industry.

PRACTICAL APPLICATION

Let us put this into perspective; a new varifocal lens design becomes available on the market and a representative from the

lens supplier visits an optical practice to promote their latest product. Would it not be tempting to get excited about the innovative technology, accept the superiority of the design, based on the information provided by the sales representative alone, and introduce it to your patients as a new premium lens?

However, in order to provide our patients with informed choice, it would be more helpful to examine current literature to understand how this lens design compares with varifocal lenses produced by other manufacturers, and find out whether independent trial studies have been carried out to test its performance. Here, good practice would be to conduct a generic review of the sources related to the topic, whereas best practice would be to critically analyse independent reports from the organisations with the least commercial interest and collaborate with other peers.

There is a need for high quality research to be carried out in order to generate a sufficient amount of evidence, upon which we can then base our practice. Double blind random clinical trial studies in the field of optometry and ophthalmic dispensing are almost absent from the literature, despite being regarded as the 'gold standard' in clinical research⁷.

In 2017, a systematic literature review was undertaken to investigate what best scientific evidence was currently available to support the use of blue-blocking spectacle lenses for visual comfort and as protection against macular disease. As a result, the College of Optometrists⁸ commented that, '*No studies reporting on the effects of blue-blocking spectacle lenses on macular health were identified... [and] only three randomised controlled trials that met the review's inclusion criteria were identified*'.

There remains significant debate surrounding the effectiveness of blue-blocking spectacle lenses for visual comfort and as protection against macular disease. Currently, the frequency of these lenses

being prescribed and dispensed is unknown; however, there are a number of marketing claims regarding their potential benefits⁹.

Some sources^{10,11} suggest that there is a direct link between the exposure to light and age-related macular degeneration, therefore all patients, especially children, should be offered these lenses; however, they use cautious language when making such recommendations. Independent sources^{9,12}, on the other hand, inform us that there is simply not enough evidence to support these claims. Guidance for ABDO members¹² states that whilst individual practitioners should be encouraged to monitor scientific developments and be aware of product availability, they should refrain from making claims relating to eye health or circadian cycles effects.

This is supported by the researchers at the College of Optometrists⁸ who advise that if we are selling blue-blocking spectacle lenses, we should make our patients aware that there is no strong evidence that these lenses, '*will improve visual performance, alleviate the symptoms of eye fatigue or visual discomfort, improve sleep quality or conserve macula health*'.

Another area of interest is prescribing and dispensing tints and coloured filters. Since the TV documentaries and other media sources have emphasised the benefits of coloured spectacle lenses in some celebrities with dyslexia, the general public formed a strong association between the condition and the tints. However, whilst using appropriate coloured filters can help to alleviate symptoms of visual stress, which could contribute to reading difficulty, the majority of patients diagnosed with dyslexia do not experience visual stress.

There is evidence¹³ to suggest that the precision of colour matters in improving performance in some types of visual tasks, particularly reading speed; such accuracy can be achieved with coloured lenses, but it is not as effective with overlays. In some individuals,

appropriately prescribed coloured filters may have a positive effect on their visual perception of the environment, including reading performance; yet many questions regarding the use of tints for people with reading difficulties remain unanswered¹⁴. Ultimately, treatment with tints remains controversial and further research is needed.

FOOD FOR THOUGHT

The impact of unfounded claims was apparent from the aftermath of the recent statement made in January 2019¹⁵ by the Israeli company Accelerated Evolution Biotechnologies (AEBi), which announced that it had discovered the 'first complete cure for cancer'. Later, its claim was found to be highly misleading, since it was based on just a few petri dish cell experiments and one mouse experiment. The organisation was heavily criticised by the physicians and researchers worldwide due to the lack of supporting evidence.

Online news sites and social media can amplify the effect of such unsupported sensational claims and provide false hope for patients and their families. When such announcements are found to be false, the general public lose trust in the medical and scientific professions, which can further result in the negative attitude towards informed expert health advice¹⁵. All claims, both ordinary and extraordinary, require evidence, which needs to be robust, despite the late Carl Sagan's popular aphorism: "*Extraordinary claims require extraordinary evidence*"¹⁶.

So, should we adopt the evidence-based philosophy in an optical practice? Despite being criticised for its prescriptive nature, the approach can provide practitioners with the best available resources to enhance their clinical skills and knowledge¹.

Is there a definitive therapy for reducing myopia? What evidence is there to suggest that yoked prisms can result in postural changes? Why is there a need for infection control guidelines in practice? These and many other questions may be answered by being able to conduct effective research within the framework of the evidence-based practice.

In the second part of this article, we will look at how to get the best out of our research and find information which is relevant, current and accurate.

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