

B EVIDENCE-BASED PRACTICE (EBP)

1 - EBP ORIGINS

Evidence-based practice originates from the concept of evidence-based medicine which integrates the clinician's individual expertise with the best available external clinical evidence (1). Clinical expertise is the knowledge acquired through experience and practice and involves the patient's individual circumstances and personal choices. EBP ensures that the best possible support is provided, and that this is based upon the best possible evidence.

To prove that a given support yields expected effects, alternative possible explanations for those effects have to be discarded. Support thus needs to be tested with a protocol guaranteeing that the observed results cannot be attributed to such causes as spontaneous improvements over time, increased therapist's attention or biased observations by the experimenter. These issues are addressed by designing experiments with control conditions (e.g. comparison with a group of participants that do not receive support) and/or matching procedures (e.g. equating therapist time across groups). Methodological considerations are pivotal to EBP.

2 - EBP FOR AUTISM SUPPORT

EBP has been extended from medicine to support for autism, however, the medical model of EBP does not apply well to supporting autistic children in education and needs to be adapted (2). This is especially true when digital technologies are involved. For example, medical EBP may require a Randomised Control Trial (RCT), where half the participants get one drug and half the participants get a placebo, but this does not extend well to digital technology supports. Indeed, digital technology is highly customizable and its use and expected outcome may vary greatly from one individual to another. A review of the available literature (3) showed that from 29,105 published articles reporting on interventions for autism, there were 27 focused intervention practices that met criteria for evidence-based practice (EBP) - that is less than 0.1%!

3 - EVALUATING EVIDENCE

Reichow et al. 2008 (4) have proposed a way of thinking about evidence. Evidence should be presented in a manner that enables other researchers to replicate the way the evidence was found. The quality of the research evidence is therefore related to how much detail is provided by the researchers, using the following categories:

HIGH QUALITY: Defined with replicable precision

ACCEPTABLE QUALITY: Defined many elements but some details are missing

UNACCEPTABLE QUALITY: Not sufficiently defined

Reichow et al. (4) defined quality indicators that revolve around how well scientific articles described the methodological design used to evaluate support and insisted on such points as:

- participants characteristics
- factors that were experimentally varied
- outcome measures and their reliability
- data statistical analysis and their link with the research question

Considering the quality of any underlying research results in one of three outcomes: **Strong evidence, Adequate evidence or Weak evidence**. Knowing about the quality of the research is a good way to start thinking about the strength of evidence. The BETA project has reviewed hundreds of studies claiming to provide evidence to evaluate EBP for technologies supporting autism – see the resources page. The BETA project has also rated hundreds of apps for their available evidence and rated them gold (strong evidence), silver (adequate evidence) or bronze (weak evidence) - see the resources page.

References

(1) On the need for evidence-based medicine (article)

(2) Evidence-Based Practices and Autism (article)

(3) Evidence-Based Practices for Children, Youth, and Young Adults with Autism Spectrum Disorder: A Comprehensive Review (article)

(4) Development of the Evaluative Method for Evaluating and Determining Evidence-Based Practices in Autism (article)