The Struggles of Applying the Science of Evidence-based Medicine in Child and Adolescent Psychiatry

“Medicine is a science of uncertainty and an art of probability.”
— William Osler, 1849-1919

Although less the case today than a century ago, medicine remains a science in which uncertainties and probabilities abound. Psychiatry, similar to other areas of medicine, is still very much an art in pursuit of the often unattainable certainty. Recognizing the nuances of this art form makes applying evidence-based medicine (EBM) to child and adolescent psychiatry difficult at times. Great strides have been made to produce guidelines for best practices in using psychopharmacology in our field. However, as every great instructor will tell you, no two patients are the same. Patients may respond differently to a certain medication than what is expected, and you must treat the patient, not the diagnosis.

EBM is a “hot topic” in medicine, and quality academic medical institutions internationally ascribe to and teach its principles. EBM was first described by Sackett et al in 1995 and built upon these concepts: Decision-making should be based on the best patient-, population-, and laboratory evidence available rather than traditions or protocols; evidence should be obtained using epidemiological and biostatistical ways of thinking, and applied to patient care; and finally, EBM should be evaluated regularly.¹ He stated that practicing EBM “means integrating individual clinical expertise with the best available external clinical evidence from systematic research.”²

Applying EBM has the potential not only to increase the credibility of our field but to bring awareness of the science related to, and biological underpinnings of, mental illness. Through education, perhaps stigma can be reduced in psychiatry. Therefore, patients will benefit because science will defend the notion that mental illness has a biological basis, just as cancer and diabetes do, and there is no shame in seeking treatment. EBM has the potential to demonstrate that psychiatry functions on an equal playing field in medicine and provides objective data to defend methodology.

Optimal EBM has historically lagged in child and adolescent psychiatry due in part to the delay in, and previous limited quality of,

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pharmacologic treatment trials. Walkup and colleagues’ explanation for this includes concerns of “using” children in studies and the tendency to avoid acknowledging the biological causes of childhood psychopathology. Until recently, the limited use of medications in children and lack of regulatory push had provided little incentive for the pharmaceutical industry to study pharmacotherapy in this population. Fortunately, augmented by improved funding and regulatory changes, our database has grown. Recent advances in the field created by rigorous trials have increased the credibility of prescribing pharmacologic treatments, and the excuse of having too limited of data to practice EBM is simply not acceptable. Even when controlled studies are limited, EBM allows consideration of “lesser” studies, making use of the best information available at the time to inform practice. For example, Chrisman et al points out that, until recently, the application of EBM in pediatric psychopharmacology relied heavily on extrapolation from adult studies, making the most of the best available data.

GAPS

Even with the growth however, there are gaps. As a consequence of inadequate research, Food and Drug Administration (FDA) approval of medications for the treatment of childhood psychopathology has been limited. The subsequent off-label use of medications in children can contribute to the inconsistent “overly artistic” treatment among practitioners. Additionally, credibility is more likely to be questioned by those outside of the field when regulatory agencies do not appear to support our treatments. This limitation in FDA approval actually supports the need to rely heavily on the practice of EBM. Even if the FDA does not defend certain pharmacologic treatments, quality-controlled trials might.

Unfortunately, EBM does have its barriers in the psychiatric field, and perhaps more so specifically in child and adolescent psychiatry. Diagnostically, we may struggle to identify “clear-cut cases,” as evidenced by recent discussions of diagnostic criteria for pediatric bipolar disorder and the Diagnostic and Statistical Manual of Mental Disorders, fifth edition. A patient may require several visits for the clinician to even begin to understand him or her and the etiology of behaviors. Once a diagnosis is made, then the application of EBM and treatment guidelines can be helpful. However, psychopathology can change over time, especially in a developing child, and the evidence-backed treatment that once appeared reasonable may have to be modified. Additionally, many EBM treatment guidelines involve a combination of medication and psychotherapy. Unless systematic pharmacotherapies and manual-based psychotherapeutic approaches are used among providers, the effectiveness of the EBM recommended treatment will not be the same for all patients.

‘COOKBOOK’ PROTOCOLS

Although a systematic approach may provide a more reliable response, the practice of EBM can be criticized for its tendency to oversimplify psychiatric treatments by requiring “cook book” protocols and assuming patients lack uniqueness. Psychiatric patients bring varying experiences and genetic compositions that make their treatment requirements differ from others, and a practitioner may need to avoid using a manual to treat a patient effectively. This must not be forgotten.

One of the greatest struggles with EBM I have encountered during my fellowship is the variation in instructors’ approaches. For example, some instructors are very knowledgeable about the latest research and request that I use objective data to guide my treatments, while others prefer the use of clinical expertise and experience. EBM, at times, may appear to have very clear-cut pathways for pharmacologic treatments and, as long as I stick to those, some instructors are satisfied. However, some instructors have vast clinical experience databases that I am expected to tap
into to tailor treatments, even if data to support such approaches is limited or even non-existent.

Diagnosticslly, I have occasionlly struggled to conform to the EBM-backed guidelines of the American Academy of Child and Adolescent Psychiatry (AACAP). For example, a psychotherapy patient was struggling during the initial phase of therapy. One instructor suggested considering a mood disorder and treating with a mood stabilizer. My psychotherapy supervisor suggested this patient was experiencing normal developmental tasks and needed guidance transitioning from one stage to another. This patient did meet the criteria for a mood disorder, and perhaps a mood stabilizer “should” have been started. However, we continued with psychodynamic psychotherapy, and the patient improved without a medication change. In this case, the experience-based diagnosis and treatment produced a positive outcome, which may or may not have occurred with an EBM approach. Although this case caused frustration initially because of the conflicting recommendations, perhaps it illustrates the best outcome of child and adolescent psychiatry training and that is to practice EBM within the context of real-life practice, keeping the patient at the forefront. Sackett reminds us that “External clinical evidence can inform, but can never replace, individual clinical expertise, and it is this expertise that decides whether the external evidence applies to the individual patient at all and, if so, how it should be integrated into a clinical decision.”

To prepare the clinician-in-training to combine such clinical expertise and external clinical evidence, medical schools start laying the foundation for the necessary “research literacy,” which is described as the key ingredient in the establishment and maintenance of good clinical practices by March et al. During residency and fellowship, we are ensured the opportunity to develop and practice applying the principles of EBM, thinking epidemiologically and biostatistically because of the Accreditation Council for Graduate Medical Education (ACGME) core competency requirements. But a basic introduction is not enough. For example, EBM needs to be incorporated into fellowship training with problem-based case conferences. Green et al discovered that such conferences correlate positively with in-training examination scores, unlike traditional didactics. Duke University Hospital child and adolescent psychiatry fellows attend didactics focused on evidence-based psychotherapies, and the use of rating scales as a part of the diagnostic assessment and treatment monitoring. If EBM is not commonly practiced by instructors of a residency program, the occasional lecture on the topic will not suffice because EBM can be like a foreign language, in that if you do not develop adequate proficiency and then use it, you lose it.

CONCLUSIONS
In this ever-changing field, the growth of our database can promote greater certainty of clinical diagnoses and treatments, overcome the barriers encountered in clinical decision-making, and allow the implementation of EBM to become standard practice. We cannot overly minimize clinical experience, however, as there will never be perfect research that can fully capture the subtleties that present clinically in our patients. Understanding these subtleties is the art that creates the challenge in our field. Preserving art in psychiatry is necessary as we maintain awareness that our patients are people and not simply data points.

Sackett clarified that good EBM practice uses “individual clinical expertise and the best available external evidence, and neither alone is enough. … Without current best evidence, practice risks becoming rapidly out of date, to the detriment of patients.”

REFERENCES