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Keywords

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In the Fall 2015 issue of *The Open Journal of Occupational Therapy*, I discussed the definition, history, and implications of personalized medicine. Personalized medicine, as described in that paper, is a comprehensive approach to health care that uses a collaborative partnership between a client and a therapist to consider the best treatment options for the individual (Burke, Trinidad, & Press, 2014). The person's specific characteristics, values, needs, and preferences are considered along with the tasks that the person performs and the environment in which the person must function. Overall, the shift toward personalized medicine is viewed as a push to return to a focus on the art of practice. The art of practice is the therapeutic skill of interacting with the client and using clinical reasoning to plan and carry out treatment based on the uniqueness of the individual and the individual's circumstances (Mosey, 1996).

Historically, the pendulum has swung back and forth between a focus on the art of practice and an emphasis on science-based practice. There have been long standing debates in medicine about universalism versus personalization, with universalism representing science-based treatments that are considered appropriate for all people who have a specific problem and personalization representing an emphasis on treatments that are tailored to the individual using the art of practice. Although there is a consistent push to improve the science on which treatment is based, the "one size fits all" approach to medical care has been periodically challenged over time (Tutton, 2012).

With each renewed emphasis on science-based practice, there has been a push back toward

the art of practice. For example, during the Victorian Era, the development of a science-based approach to treatment was met with resistance by physicians who claimed that "their art of clinical practice was predicated on a highly individualized approach to diagnosis and therapy" (Tutton, 2012, p. 1724). "They stressed the 'art' of medical practice, which was founded upon a privileged epistemology of patient individuality in contradistinction to the universalization of knowledge represented by the laboratory sciences" (Tutton, 2012, p. 1724).

In general, arguments in favor of universalism are usually made using statements about future care based on potential scientific revolutions or promises of technological breakthroughs. When those breakthroughs present with limits, such as limited evidence on which to base practice, a movement back toward personalized care and an emphasis on human variability will once again become the focus of the professional discourse.

Evidence-based Practice

Most recently, the health professions have been driven toward universalism with the advent of evidence-based practice (EBP). EBP is the "conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients" (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996, p. 71). Law and Baum (1998) further define EBP as "placing more emphasis on the integration and transfer of research knowledge into practice to be used along with clinical judgment, client choice and clinical training" (p. 132). Randomized, controlled studies

have been touted as the gold standard of scientific evidence on which practice should be based.

An over-emphasis on this science-based approach has resulted in problems for the health professions. As Jauhar (2014) stated,

The effort to homogenize health care presumes that we always know which treatments are best and should be applied uniformly. Unfortunately, this is not the case. The evidence for most treatments in medicine remains weak. In the absence of good evidence recommending one treatment over another, trying to stamp out variation in care is irrational. (p. A33)

At times, EBP has been rigidly applied.

Treatment guidelines that were supposed to support and guide treatments become mandates that if not followed could lead to malpractice lawsuits.

“Instead of being allowed to deliver ‘patient-centered’ care, many physicians feel they are being co-opted by regulations. Some feel pressured to prescribe ‘mandated’ treatments, even to frail older adults who may not benefit” (Jauhar, 2014, p. A33).

Over time, some of those treatment guidelines, which essentially became mandates, have been reversed. For example, the use of beta-blockers for almost all patients undergoing non-cardiac surgeries became standardly adopted and then reversed after finding that they significantly increase the risk of stroke at the time of surgery, and hormone replacement therapy for post-menopausal women was widely implemented and then abandoned (Jauhar, 2012).

Occupational Therapy

As a part of the medical community, the profession of occupational therapy (OT) has been affected by the pendulum swings between a focus on the art of practice and an emphasis on science-based practice. As with the health professions in general, the push for science as the basis of OT interventions is couched in statements about future developments that will provide support for practice. In the 2000 Eleanor Clark Slagle Lecture titled “Our mandate for the new millennium: Evidence-based practice” Holm discussed levels of evidence and the need for the profession of OT to pursue EBP (2000). Based on this lecture and the work of other scholars, the profession established goals that emphasized EBP with the intention of promoting the science base of the profession. In the Centennial Vision for 2017, “our leaders envision greater innovation based on science to guide practice and to provide the evidence to support occupational therapy intervention” (Crepeau, Schell, & Cohn, 2009, p. 219). There is no mention of the art of practice in the Centennial Vision.

The exclusive push toward science and EBP has driven the profession toward a homogenized medical approach or a “one size fits all” approach to treatment. Randomized, controlled trial studies, systematic reviews, and advanced statistical analyses may provide answers to questions regarding the effectiveness of a treatment for most people or for the average person, but occupational therapists work with individuals, not averages. Marketing professionals who are concerned about persuading the average person to buy a product might benefit greatly from knowing what appeals to

most people. OT, however, is a health profession that works with individuals with varied characteristics, values, needs, and preferences that must be considered along with the tasks that the person performs and the environment in which the person must function.

In EBP the focus is on the most effective treatment for the average person according to specific diagnoses. A diagnosis, however, is only one aspect of the individual's profile and "most diseases involve a complex and multi-factoral dynamic with few linear causal relationships" (Pöder & Assel, 2015, p. 178). A simplified scenario is as follows. A randomized, controlled study examining interventions for memory deficits may find that one specific cognitive strategy is significantly more effective than other strategies to improve memory function for 51% of participants with acquired brain injuries (ABI). So, based on that study, an occupational therapist would teach all people with ABI to use that one specific memory strategy. That strategy, however, would not be effective for 49% of the people with whom it was used. So, in practice, the occupational therapist would not want to teach that one specific memory strategy to all people with ABI, but pursue several strategies and find the ones that work the best for each individual. This is personalized medicine. The treatment should be tailored to the individual and research should not only focus on which strategy works for most people, but also determine why one strategy works for some people and not for others. Each therapist must modify the treatment for the individual based on individual variances

deciphered by our art of practice and based on the best available scientific information.

Merging Personalized Medicine and EBP for Best Practice

In the late 1800s, the famous physician William Osler observed that "If it were not for the great variability among individuals, medicine might as well be a science and not an art" (quoted in Tutton, 2012, p. 1721). Because the health professions work with individuals and each individual has different personal and life circumstances, the science of the professions cannot completely dictate clinical practice. Instead of a constant shift from one focus to another, there must be a merging of both the art and the science of practice. Clinical judgment is an art and clinical practice is, of course, both an art and a science (Tutton, 2012).

Some of the current presumptions about personalized medicine imply that the art of practice is only used when there is not science to support clinical decisions (Tutton, 2012).

The weaker a treatment recommendation, the more patient preferences should enter into medical decision making, and the more variation you should expect to see. This is a basic conflict in modern medicine: treatment uniformity, which aims to optimize population health, versus treatment variation, which aims to respect individual choice (Jauhar, 2014, p. A33)

Instead of a conflict between the art and science of the profession or the assumption that one is used when the other is not, the aim should be to merge the two in clinical practice. The art of

practice, which includes therapeutic interactions using empathy, collaboration, teaching-learning, and nurturing should not be separated from the use of evidence, but rather integrated with scientific knowledge as part of the clinical reasoning and decision making process. The aim of the profession of OT should be to bridge the gap between art and science through an awareness of the different types of knowledge and uses of information in clinical practice. A call to action that embraces either the art or science of OT should not lead to the denigration or disregard of the other. Both the art and the science of OT are equally important for building the profession and ultimately for serving the people for whom we care.

OJOT will continue to publish articles that focus on building a scientific knowledge base for the profession of OT, but we will also continue to publish works that focus on the art of practice. Not only do we feature art as an occupation in each issue, we continue to be interested in manuscripts that focus on therapeutic relationships and clinical reasoning integrated with the use of scientific evidence to form the knowledge base of the OT profession. We encourage researchers and authors to explore the merging of art and science for promoting best practice.

References

- Burke, W., Trinidad, S. B., & Press, N. A. (2014). Essential elements of personalized medicine. *Urologic Oncology: Seminars and Original Investigations*, 32(2), 193-197.
<http://dx.doi.org/10.1016/j.urolonc.2013.09.002>
- Crepeau, E. B., Schell, B. A. B., & Cohn, E. S. (2009). Contemporary occupational therapy practice in the United States. In E. B. Crepeau, E. S. Cohn, & B. A. B. Schell (Eds.), *Willard and Spackman's Occupational Therapy* (11th ed.) (pp. 216-221). Philadelphia, PA: Lippincott Williams and Wilkins.
- Holm, M. B. (2000). Our mandate for the new millennium: Evidence-based practice, 2000 Eleanor Clarke Slagle lecture. *American Journal of Occupational Therapy*, 54(6), 575-585.
<http://dx.doi.org/10.5014/ajot.54.6.575>
- Jauhar, S. (2014, December 10). Don't homogenize health care. *The New York Times*. Retrieved from <http://www.nytimes.com/2014/12/11/opinion/dont-homogenize-health-care.html>
- Law, M., & Baum, C. (1998). Evidence-based occupational therapy. *Canadian Journal of Occupational Therapy*, 65(3), 131-135.
<http://dx.doi.org/10.1177/000841749806500301>
- Mosey, A. (1996). *Applied scientific inquiry in the health professions: An epistemological orientation* (2nd edition). Bethesda, MD: AOTA.
- Pöder, J.-C., & Assel, H. (2015). The concept of disease in the era of prediction. In T. Fischer, M. Langanke, P. Marschall, & S. Michl (Eds.), *Individualized medicine: Ethical, economical and historical perspectives* (pp. 165-180). New York: Springer.
http://dx.doi.org/10.1007/978-3-319-11719-5_9
- Sackett, D. L., Rosenberg, W. M., Gray, J. A. M., Haynes, R. B., & Richardson, W. S. (1996). Evidence based medicine: What it is and what it isn't. *British Medical Journal*, 312(7023), 71-72.
<http://dx.doi.org/10.1136/bmj.312.7023.71>
- Tutton, R. (2012). Personalizing medicine: Futures present and past. *Social Science & Medicine*, 75(10), 1721-1728.
<http://dx.doi.org/10.1016/j.socscimed.2012.07.031>