Supporting Recovery Through Design: A Translational Application of the Neuroscience of Eating Disorders to a Treatment Facility

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ABSTRACT:

Recent advances in neuroscience research have begun to unravel neural correlates of eating disorders. Findings suggest functional and anatomical differences in processing and anatomy resulting in perceptual, affective, physiological and cognitive distinctions-- many of which have environmental correlates with respect to how persons with eating disorders experience their surroundings. This unique set of experiences can inform the design of specialized behavioral health facilities programmed for treating eating disorders. This poster will 1) review findings in eating disorder research across key themes associated with restorative care as a critical first step to developing research informed goals and translational design considerations for environmental interventions in eating disorder service settings, 2) share research conducted with patients and staff to capture the eating disorder patient experience, and 3) describe how evidence was applied to guide the programming and design of a new residential treatment center, Eating Recovery Center in Denver, Colorado.

A former NIMH director called anorexia nervosa the most fatal mental disorder (Insel 2012) given that it has the highest morality rate of any mental illness, 10% (Arcelus 2011). A review of eating disorder literature elucidates distinct characteristics of persons with eating disorders and the therapy they are receiving as unique from other behavioral health classifications. Evidence suggests that eating disorders are complex conditions which present discrete differences in neural anatomy and processing often in response to environmental correlates which affects how a person with eating disorder relates to an environment. For example, because the circadian rhythms of food intake in persons with eating disorders are abnormal, optimized light can aid regular eating to synchronize circadian rhythms influencing hunger and temperature (Yamamotova 2008) whereas low light, diurnal and seasonal, can undermine self-regulatory control resulting in the disinhibited eating in persons with bulimia (Kasof 2001). In addition, research suggests that associated over/under sensory modulation issues characteristic of certain eating disorders may result in proprioceptive impairment affecting spatial cognition (Brand-Gothelf et al 2016, Chieffi et al 2015).

Given the limited evidence examining interactions between the environment and eating disorders, mining the patient perspective was essential to developing hypotheses around environmental impacts on delivery of care and recovery. Because functional aspects of eating disorders tend to heighten a patient's dissatisfaction and ambivalence (Swain Campbell 2001) conventional instruments such as patient satisfaction questionnaires do not accurately assess the experience of persons with eating disorders nor the success of the facility design in supporting recovery. Thus, we structured this data collection as an exploratory study by applying grounded theory (Patton 1990) to uncover themes related to patient outcomes using the methods described by Trzpac et al 2016 as precedent. We will share this research approach to capturing patient experience through the development of an experience-based questionnaire and simulated empathetic observations.

Findings from this literature review and data collection will be summarized as associated key design goals and research-informed design strategies, linked with specific attributes of eating disorders. The translational application of such strategies will be illustrated in the dining spaces and community spaces and art selection at Eating Recovery Center's newest residential facility.

This interdisciplinary team continues to build on this initial research effort as new Eating Recovery Center facilities are being built at locations across the country. Future work will include examining patient outcomes associated with lighting and facility geographic locations.

REFERENCES:

Arcelus, J., Mitchell, A., Wales, J., Nielsen, S. (2011). Mortality Rates in Patients With Anorexia Nervosa and Other Eating Disorders: A Meta-analysis of 36 Studies. Archives of General Psychiatry, 68, 7, 724–731.

Brand-Gothelf, A., Parush, S., Eitan, Y., Admoni, S., Gur, E. and Stein, D. (2016), Sensory modulation disorder symptoms in anorexia nervosa and bulimia nervosa: A pilot study. International Journal of Eating Disorders, 49: 59-68.

Chieffi, S., Iavarone, A., La Marra, M., Messina, G., Villano, I., Ranucci, S., Messina, A., Piombino, L., Dalia, C. and Monda, M. (2015) Memory for Proprioceptive Targets in Bulimia Nervosa. Journal of Psychiatry, 18, 297.

Insel, T. (2012). Spotlight on Eating Disorders. The National Institute of Mental Health: www.nimh.nih.gov

Kasof, J. (2001). Eveningness and bulimic behavior. Personality and Individual Differences, 31, 361-369.

Patton, M. (1990). Qualitative evaluation and research methods (2nd ed.). Newbury Park, CA: Sage.

Swain-Campbell, N., Surgenor, L. and Snell, D. (2001), An analysis of consumer perspectives following contact with an eating-disorders service. Australian and New Zealand Journal of Psychiatry, 35: 99-103.

Trzpuc, S., Wendt, K., Heitzman, S., Skemp, S., Thomas, D. and Dahl, R. (2016). Does Space Matter? An Exploratory Study for a Child–Adolescent Mental Health Inpatient Unit. HERD: Health Environments Research & Design Journal, 10, 1, 23–44.

Yamamotová, A., Papezová, H., and Vevera, J. (2008). Normalizing effect of bright light therapy on temperature circadian rhythm in patients with eating disorders. Neuroendocrinology Letters, 29, 1, 168-72.

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As design researcher for Boulder Associates Architects, Meredith promotes the firm's commitment to person-centered design by cultivating research partnerships with healthcare clients, exploring innovative methods of conducting research, and gathering and translating evidence with designers. Having been a faculty member in architecture and environmental design programs for over ten years, Meredith brings to Boulder Associates experience in health-design research and pedagogy supporting the transformational shift in practice towards an evidence-based culture. She was an original Research Associate with the Academy of Neuroscience for Architecture (ANFA) and remains an active Advisory Council member.

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As Vice President of Operations and Development at Eating Recovery Center, Kathleen Reeves brings over 25 years of healthcare experience, ranging from the direct delivery of patient care as a clinical clinician to the provision of administrative oversight in various director- and executive-level positions. In her current role, Kathleen is tasked with operational strategy development, planning and execution for Eating Recovery Center's facilities, including facility development and expansion, accreditation/licensing, patient housing, transportation and other ancillary services.