

Clinical Care

“Lifestyle as Medicine” Offered in the Inpatient Setting

What changes could you make to improve your health? Could you increase your physical activity or clean up your diet? A mix of both? As a medical student, Carrie Wu posed these questions to a group of patients with severe mental illness (SMI) for her Senior Scholars project to test if the psychiatric inpatient unit could represent a novel setting for a lifestyle intervention.

Metabolic syndrome embodies a cluster of clinical risk factors such as high blood pressure or obesity that contribute to an increased risk of serious health issues. The rate of metabolic syndrome in SMI is estimated to be double that of the general population and has been attributed to side effects of antipsychotic medications as well as unhealthy lifestyle choices common in this population.

With this in mind, Carrie teamed up with the Psychotic Disorders Program to deliver a brief 2-session lifestyle education program conducted in a psychiatric inpatient unit each week. The educational program seemed well received by participants and presented them with important health information during their short hospital stays.



Group discussions on facilitators and barriers to making health changes allowed participants to express their hopes and concerns about their health and choices. By the end of each session, patients became more aware of how their behaviors impacted their health. They enthusiastically shared personal goals and offered each other exercise advice.

All in all, the study illustrated that patient education starting in the inpatient unit appears feasible and can help mitigate the risk of comorbid health conditions. We have submitted a manuscript of the study for publication and hope similar initiatives continue in the future.

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Research

Sleep Well Live Well – A Novel Treatment for Insomnia in Patients with Schizophrenia



Insomnia, defined as the habitual inability to sleep, affects between thirty to forty percent of patients with schizophrenia. The high rate of insomnia in this patient population is thought to be due to biological mechanisms related to dopamine overactivity, hallucinations, and delusions. Currently, the most common pharmaceutical treatments for insomnia are benzodiazepines and benzodiazepine receptor agonists (BZRAs). However, these medications can be harmful due to their abuse potential and toxicity.

Given these issues, the Psychotic Disorders Program will launch an investigator- initiated trial to examine the safety and efficacy of suvorexant for treating insomnia in those living with schizophrenia. While suvorexant has proven to be effective for treating insomnia in the general population, its effects on patients with schizophrenia remain to be uncertain. This will be a 4-week, randomized, double blind, placebo controlled clinical trial, with a plan of enrolling 60 patients with schizophrenia and insomnia. Our study seeks to measure potential improvement in symptoms of insomnia and evaluate changes in schizophrenia symptoms and cognitive function. With this study, we hope to elucidate the potential benefits of suvorexant treatment for symptoms of insomnia and psychosis in this patient population.

Combatting Treatment Resistant Schizophrenia

Treatment Resistant Schizophrenia (TRS) affects approximately one third of all patients with schizophrenia. While current antipsychotic medications function by targeting abnormal presynaptic dopamine transmission, biological differences in TRS patients necessitate novel treatment approaches targeting alternative neural pathways. Studies have found that excessive glutamatergic signaling, present in patients with TRS, may result in calcium influx and neuronal injury, likely leading to clinical symptoms such as persistent delusions, hallucinations and cognitive impairment.

Telmisartan, a selective angiotensin II receptor type 1 blocker, is a widely used antihypertensive agent. Studies have shown that telmisartan can reduce glutamate induced neuronal injury and apoptosis. Our recent study published in *Acta Psychiatrica Scandinavica* revealed that a 12-week intervention of telmisartan resulted in significant improvement of schizophrenia symptoms.

The UMass Psychotic Disorders Program now launches a follow up study to examine just how telmisartan alters brain chemistry in patients with TRS by conducting a neuroimaging trial in adult patients with TRS. The study will enroll patients to receive a daily 80-mg dosage of telmisartan as an adjunctive treatment for four weeks. Through this trial, we hope to better understand the biological basis of telmisartan treatment for schizophrenia in the brain.



Community Initiatives

Cooking Up a Tasty Solution

Eat zoodles, not noodles. Kevin, head chef of Roots Natural Foods Market explained. Chef Kevin's hands danced over the stove as he shared about the benefits of eating zoodles (zucchini noodles) and meatballs, a healthier veggie-filled carb-free alternative to spaghetti and meatballs. Kevin came as part of a healthy living event to address a "triple jeopardy" risk of mental disorder, metabolic problems (such as obesity and diabetes), and substance use, which are common in patients with severe mental illness. In partnership with major local health care organizations, patient and family groups, and other stakeholders, the Psychotic Disorders Program launched a "Lifestyle as Medicine" initiative as part of our comprehensive Community Intervention Program for Severe Mental Illness (CIP-SMI).

On June 13th, our program packed into the beautiful Tower Hill Botanical Garden in Boylston, MA with patients and staff from Community Healthlink to join a Cooking Demonstration event with Chef Kevin. But before Kevin's flavor-filled finale, patients were asked about the obstacles that prevent them from pursuing a healthier lifestyle. Jennifer Parker, a UMass nutritionist, introduced MyPlate, the currently recommended nutrition guide, and then addressed some of their concerns by showcasing different quick simple and delicious healthy food recipes. The event culminated with a stroll through the scenic botanical garden to encourage exercise into patients' lifestyles. All participants praised the event and left feeling motivated and confident to change their eating habits. Our programs are planning to continue hosting similar healthy living events for the community.



Global Initiatives

More Than a Gut Feeling: Microbiota and Schizophrenia

Branching outside of Worcester and the U.S., our program has collaborated with Dr. Xueqin Song, a professor and Vice Chair in the department of Psychiatry at China's Zhengzhou University Affiliated Hospital, for a study delving into the role of gut microbiota in schizophrenia, which was recently published in *Schizophrenia Research*. Dr. Song, a visiting scholar in our program from 2012-2013, has been collaborating with Dr. Xiaoduo Fan, director of the Psychotic Disorders Program, for many years; this latest study only adds to a growing list of publications we have worked together.

An increasingly important focus has been placed on the relationship between gut microbiota



(microorganisms) and the brain. Disruptions to healthy gut microbiota have been linked to problems with the central nervous system through so-called “gut-brain axis”. Dietary changes can alter the composition of microbes in the gut, and may help alleviate problems associated with an unhealthy microbiota.

Our collaborative study found patients with schizophrenia to have decreased levels of five different types of bacteria, such as *E. coli*, *Lactobacillus* and *Bifidobacterium* in their microbiota compared with healthy individuals and signaled a correlation between gut microbiota and schizophrenia potentially mediated by biological processes like inflammation and neuronal development. These associations will be further studied moving forwards.

Talent Exhibition

Every year, a group of talented college student interns, medical students, and psychiatry resident are with the Psychotic Disorders Program. During their time here, they are involved with a multitude of the program's activities, ranging from leading community-based initiatives to writing publishable scientific papers. We would like to thank them for their hard work and exhibit a few of the projects they have been working on!

Mindfulness, Meditation, and More...

In some cases of schizophrenia, typical treatment consisting of antipsychotic medications has proven to be insufficient. Therefore, a recent initiative has been the application of mindfulness as a treatment for individuals suffering from schizophrenia. Mona Polavarapu and Sindhu Kosuru, college interns at the Psychotic Disorders Research Program, completed a review paper about mindfulness-based psychotherapeutic interventions in schizophrenia. Mindfulness originates from Buddhist psychologies and emphasizes the self-regulation of attention and the ability to attend to one's physical and mental processes through a nonjudgmental lens. Dr. Madhusmita Dhakal, a UMass psychiatrist who is particularly interested in exploring how loving-kindness meditation can improve symptoms of schizophrenia, has helped with the paper writing.

Joined by Dr. Dhakal, as well as Meg Chang, an instructor at the Center for Mindfulness at UMass, the Psychotic Disorders Program is planning to conduct a pilot study examining the benefits of mindfulness for schizophrenia. We believe mindfulness-based interventions have the potential to greatly improve the quality of life of those living with schizophrenia or other severe mental illnesses.

Early Psychosis on College Campuses

A diagnosis of schizophrenia is generally preceded by prodromal psychosis, the earliest phase of schizophrenia featuring the onset of psychotic features. Early detection of psychosis can significantly improve the health outcomes of patients. The average age of onset of early psychosis occurs around late teens to early twenties, making it sensible to target college students with early intervention strategies. However, significant barriers remain including lack of education, stigma, and lack of access to mental health care.

A group of UMass medical students including Amy Cheung, Mark Liu, Nolan Neu, Jennifer Selland, are planning to develop a project, under the guidance of UMass child psychiatrist Dr. Abita Raj. This project aims to target local colleges to improve early psychosis screening and detection and promote health-seeking behavior among college students. A screening day will be conducted at each college campus using the Community Attitude towards the Mentally Ill (CAMI) questionnaire and the Prodromal Questionnaire 16 (PQ-16). In addition, professional training will be provided to behavioral health counselors on campus to help them build knowledge base and clinical skills on early psychosis.

Drawing on Creative Treatment Methods

Everyday experience shows that a soothing song can calm your nerves, just as creating colorful crafts can lift your mood. Art therapy is a branch of psychotherapy that plays on the relaxing and mood-boosting properties of creative processes for the treatment of a large variety of illnesses. The therapy showcases techniques ranging from banging on xylophones to painting a mask or writing a poem. Although art therapy can provide instrumental relief to psychiatric patients, it lacks use and recognition from clinicians.

The Psychotic Disorders Program hopes to change that. Dr. Delia Bakeman and Dr. William Reid-Varley, both UMass psychiatry residents, helped host a paint night for individuals with severe mental illness. We hope to further engage patients with mental illness in creative art therapy projects such as open mic nights, musical performances, and even participating in a theatrical drama. We anticipate these activities will foster confidence and pride in participants and help place awareness for mental illness under the bright lights in the community.



Pictured above: A showcase of artistic talent and emotional release from a group of individuals with severe mental illness who participated in our painting event on May 18th. The event was facilitated by Shaun Cannon, founder of the Pronoia Art Alliance, an organization involving professional art therapists and seeking to foster creativity in all artists.

Ongoing Studies in Schizophrenia Looking for Subjects

The Psychotic Disorders Research Program is looking for patients with schizophrenia to participate in our multiple ongoing studies.

The Memory Study – This study seeks to see if exenatide, an investigational drug when used in people with schizophrenia, can improve memory, thinking, and possibly promote weight loss in individuals with schizophrenia.

The Substance Use Study – The purpose of this study is to see whether brexpiprazole, an investigational drug, can help reduce substance use in individuals diagnosed with schizophrenia or schizoaffective disorder.

The Treatment-Resistant Study – The purpose of this study is to see whether Lu AF35700, an experimental drug, is safe and effective for the possible treatment of treatment-resistant schizophrenia.

If you or someone you know is interested in participating in a research study or clinical service, please contact us:

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