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The Importance of Nutrition Education as a Recovery Component for
Individuals with Severe Mental Illnesses

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Abstract

In efforts to challenge the Western medicine's determination of nutrition as a holistic approach, this paper represents the intent for mental health facilities in California to improve or implement nutrition education curriculum by enhancing interprofessional teams with dietitians as an important component of recovery for severe mental illness patients. There is concrete evidence proving that individuals who are in facilities recovering from mental illnesses have benefited from optimal nutrition consumption. Nutrition education has become a component among the toolbox of recovery options, but unfortunately it is not encouraged enough. Pharmaceutical companies advertise drug therapy as the most effective way to treat a mentally ill person. However, this causes patients to lose their sense of self and are not given the opportunity to try other forms of recovery. Optimal nutrient consumption and nutrition education leads to minimal use of prescription drugs as there have been nutritional interventions demonstrating the improvement of mental disorder symptoms, physical health, and chemical imbalances in the brain. This capstone is an aspect of my fieldwork with Crestwood Behavioral Health Inc. that has led to the recommendations for bringing awareness to this recovery component, for facilities to implement or improve the nutrition education curriculum, and expand collaborative professional teams. There are multiple supportive literature reviews on improving nutrition intake and expanding SMI patients' knowledge on the topic as being safer for mental and physical health. Nutrition education allows individuals to develop sustainable healthy habits, while reducing risks of physical health complications and improving mental disorders overall.

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Introduction

Food is medicine for the mind and body. There is a misconceptions on the benefits of nutrition for mental health, and it is important for there to be more of a nutrition focus on patients with severe mental illnesses (SMI)¹ as they are at an increased risk for physical illnesses and lower quality of life. Nutrition is more often associated with physical health rather than mental health. Physical health is improved or maintained through healthier food choices, but mental health also depends on nutrients and vitamins consumed from food. In 2017, there was a high 4.5% prevalence of U.S. adults, aged 18 or older, with SMI. This is estimated at 11.2 million adults. SMI conditions include schizophrenia, anxiety disorder, depression, bipolar disorder, and eating disorders. (National Institute of Mental Health, 2017). Mental disorders are caused by traumatic life events, malnourishment, and even a combination of the two. Currently in 2020, the prevalence rate has decreased slightly to 4.38%. Therefore, there are still efforts to be done.

Obesity and metabolic syndrome are among the risk factors for SMI patients. If nutrition is not an important component during the recovery process, then the patient will be at higher risk for developing other health complications. The mental health recovery process has various forms of therapy. However, nutrition education is not often considered as therapy or an integral component of recovery due to its holistic approach. Western medicine is prominently dominated by traditional practices, such as prescription drug approaches that can lead to addiction. Nutrition is an essential component for recovery as food is considered medicine for the mind and body. SMI patients being educated on nutrition is also as important because they will learn why they are eating certain foods to improve their mental and physical health. With nutrition

¹ Severe Mental Illness (SMI): a mental, behavioral, or emotional disorder resulting in serious functional impairment, which interferes with or limits major life activities (National Institute of Mental Health, 2019).

education as a recovery component, SMI patients will be able to develop sustainable healthy habits also. While mental health is dominated by pharmaceutical interventions, it is important for mental health facilities to implement nutrition education as a recovery component because SMI patients need to understand why nutrition is important for their mental health and recovery. Nutrition education allows individuals to develop sustainable healthy habits, while reducing risks of physical health complications.

Background

Nutritional Interventions for SMI patients

Nutritional interventions bring solid recovery and a lasting impact for SMI patients. For example, for 9 months in Australia, SMI patients were provided personal dietetic treatment and lifestyle counseling every two weeks (Hassapidou et al., 2011). Anthropometrics and biochemical measurements were taken every 3 months to observe changes. In between measurements, participants were meeting with dietitians. At initial meetings, the dietitians gave participants their dietary intake plan based on their measurements and lifestyle history. The dietary regimen was designed to have a moderate consumption of carbohydrates, protein, fats, and high fiber. Also, they were advised to consume fruits, vegetables, whole grains, and to increase their intake of olive oil, a healthier fat alternative.

A detailed nutritional intervention like this one gives participants the guidance they need to improve their mental and physical health. SMI patients who undergo antipsychotic interventions are most likely to be at a greater risk of weight gain and could result in obesity due to the harsh side effects and depressive moods (Hassapidou et al., 2011). During this intervention, medication was kept constant for every participant, as instructed by their medical doctors. However, with the addition of nutritional counseling, there were significant changes in their body composition and biochemical measurements. Participants decreased their weight, body mass index (BMI), waist/hip widths, and total cholesterol concentrations from baseline, to 3 months, 6 months, and 9 months. While mental health requires pharmaceutical interventions, the impact of nutrition education is greatly observed and successful.

The role of dietitians. Dietitians have been involved in nutritional interventions for SMI patients to more suitably focus on nutrition education and dietary counseling. In a study,

Teasdale et al., (2018) highlighted how dietitians' involvement and nutrition improved mental and physical health during an intervention that also took place in a second study in Australia. The dietitians in the intervention worked with multidisciplinary mental health teams and provided medical nutrition therapy, that resulted in improving the nutritional status of patients and preventing comorbidities. While improving physical health, mental state is also changing. Mental health clinicians are highly trained to meet the needs of SMI patients, but they do not have the training that dietitians have. This creates a gap between nutrition and mental health. More facilities should have the presence of dietitians during counseling sessions as multidisciplinary teams often include psychiatrists, clinical psychologists, specialist mental health nurses, social workers and occupational therapists, but it was not until recently that lifestyle and life skill interventions were offered in the same clinical settings (Teasdale, Samaras, Wade, Jarman, & Ward, 2017). This is another reason supporting my recommendation of nutrition education to be an important component of recovery among all other components.

Lower rates of mental illness are linked to healthy diets, such as those high in vitamins and minerals, consuming little to no amounts of red meat, limiting intake of sodium and sugar, and having more plant-based options in meals (Thomas, 2019). SMI results in dietary patterns changing due to the condition. For example, depression could lead to loss of appetite or wanting to binge sugary snacks and drinks. Being educated on healthy eating and consciousness on negative eating habits could help alleviate the compulsive cravings and offer alternatives when hungry. This can potentially lead to sustainable healthy habits while improving mental health. The brain requires consistent intake of nutrients and energy for optimal function, and the best way to do so is through adequate nutrition.

Cooking Classes. Consuming food because it is served to patients and being told it is healthy is one aspect, however, it would be more beneficial if patients understood the reason why they are eating certain foods and avoiding others as it empowers resilience and sustainable health impacts in SMI patients. Individuals with SMI are often neglected in health promotion strategies that are targeted for the general public, or people without SMI (Clark, Bezyak, & Testerman, 2015). With a mental illness, there are different approaches to how a person learns, but this does not mean they are incapable of learning. Multiple studies have proven that nutrition education is essential during the recovery process. Clark, Bezyack & Testerman (2015) observed the difference in eating behaviors and cooking skills after SMI individuals attended a 6-week cooking class in Northern Colorado. Before the class, 24-hour dietary recalls were done and high levels of sodium and fat and low levels of fiber were consumed. Also, low levels of fruits and vegetables were consumed. After the 6 weeks, there were significant increases in calcium, vitamin D, grains, and fruit. The individuals also showed improvement in self-efficacy in cooking and grocery shopping. Participants expressed their preferences to learning through simple messages, hands-on cooking demonstrations, and health-related incentives. This component during recovery should always be implemented as its benefits have been proven.

Physical Interventions for SMI Patients

Since SMI patients are also at risk for metabolic syndromes and significant weight gain, physical health should also be implemented during the discussion on nutrition. Physical activity promotes important lifestyle changes within this population because people with mental disorders, especially schizophrenia and substance-abuse disorder, are at risk of premature death from natural causes such as diabetes, respiratory disease, infections, and cardiovascular diseases (Kristiansen et al., 2015). Only nutrition, regardless of how healthy the person eats, is not

sufficient for SMI patients to stay physically healthy. Often, patients refuse to be active because of lack of motivation or energy. In this study, Kristiansen et al., documented the reasons why patients did not want to exercise: “my heart starts galloping”, ‘I get too short of breath’, and ‘my body cannot really stand it’. Lifestyle changes are difficult when there is pushback from the patients or when there is no one to motivate them as this is a team effort. Healthy food choices give more energy to patients and allow for healthy new beginnings.

Lifestyle changes begin with action, as staff at these facilities need to aid in the promotion of being active regularly. A pilot study of the Nutrition and Exercise for Wellness and Recovery was conducted in Arizona as a weight loss program for SMI patients, and had a successful outcome (Brown et al., 2015). Occupational therapists and occupational therapy graduate students delivered interventions that led to patients losing weight and having increased levels of knowledge about nutrition and exercise. The structure of the intervention consisted of a curriculum that included interactive lessons, a 20-minute moderate intensity workout, and the class ended with a healthy meal. Participants were given recipes, a book with tips for eating out, and elastic exercise bands. Although this class only met once a week for 2 hours, after 8 weeks, at immediate post-intervention, participants lost an average of 3 pounds. At the 6-month follow up, there was an average weight loss of 10 pounds. This proves the significance in implementing a strong foundation for both nutrition and physical education. If there were positive results after a small trial, then there would be even greater results with permanent similar programs in all mental health facilities in California.

This sole purpose of this paper was to reiterate the importance of nutrition education for SMI patients, but it is not to be forgotten that physical education is also a concept to be taught along with nutrition. Dispasquale et al. (2019) have observed that people with schizophrenia

have a high incidence of metabolic syndrome. Metabolic syndrome includes abdominal adiposity, hypertension, and diabetes. With this high incidence, they are more susceptible to mortality from cardiovascular diseases. The incidence rate of metabolic syndrome and obesity among patients diagnosed with schizophrenia has been estimated to be as high as 54%, double the incidence rate within the general population (Wu et al., 2019). Statistical evidence proves there is a direct correlation between nutrition for improving metabolic syndrome and schizophrenic behaviors. Mental health and nutrition do have a correlation that cannot be overlooked during the recovery process.

Effects of prescription drugs on SMI patients

As previously stated, SMI patients have a high prevalence of obesity due to antipsychotic treatments (Hassapidou et al., 2011). Being dependent on a prescription drug during recovery could possibly lead to the use of other drugs or narcotics, as the body adjusts and longs for the sensation. Prescription drug therapy has commonly used chlorpromazine, clozapine, and olanzapine (Teasdale et al., 2017). These 3 antipsychotics contribute substantial weight gain and puts patients at high risk for lipid and/or glucose disturbance, which alters their metabolism. If physical health complications such as diabetes occurs, the patients will also have to be put on more medications to assist those complications. Skouroliakou, Giannopoulou, Kostara, & Hannon (2008) have proven that nutritional intervention improved body weight and composition in patients who were taking olanzapine. This intervention has its difficulties due to the patients being under the influence of medication. There were many who dropped out due to the inability and unwillingness to participate, as their medications made them feel irritable or could not pay attention, which reiterates how impactful prescription drugs can be to the mind. A step to move

forward with SMI patients is to improve their nutritional intake and educate on the consequences so they feel as if they are capable of making lifestyle changes.

The nutritional interventions that have focused on preventing pharmaceutical treatments have reported that increasing lifestyle changes, such as staying physically active, learning how to grocery shop, having healthier food choices, has resulted in lowering doses of medication. Deenik et al. (2018) proved this in an 18-month intervention. The mental illnesses involved were on a varied spectrum including schizophrenia and Parkinson's disease. The intervention focused on changing the daily routines of the participants, to give them structure and educate on how to have a productive lifestyle. Daily routines included waking up early and having 3 meals per day, with the addition of activities related to sports (walking, running, biking and yoga), work tasks, such as gardening and house-keeping, psycho-education about side-effects and dietary habits, and skills training on making a grocery list, shopping, and cooking. All these activities contributed to a healthier state of mind as they feel productive and not controlled by their medications. With this intervention, the highest decrease of 40% was seen in lowered use or doses of antipsychotics (Deenik et al., 2018). The brain is a complex organ, and the function of the mind takes time to change, but with guidance from mental health and nutrition professionals, it is possible.

Nutrition Improves Chemical Imbalance. There are four neurotransmitters found in the brain: serotonin, dopamine, norepinephrine, and epinephrine. Imbalances with serotonin and dopamine are associated with major depression disorder that frequently leads to suicidal behavior or suicide (Prepelita, 2018). Patients with psychotic disorders, who are either not medically stable or are being treated with medications, have lower levels of serotonin and dopamine and react with aggression. Serotonin is responsible for regulating emotions and

behaviors, including inhibiting aggressive behaviors while dopamine is involved with motivation and reward processing. These two neurotransmitters can be increased by the intake of food, as certain foods produce chemicals to inhibit in the brain such as dark chocolate, omega-3s, and lentils (Cavaye, 2020). With satiation, comes improved mood and regulated blood sugar levels, therefore nutrition intake is important for the brain. Adversely, serotonin influences dietary choices (Vlaev, Crockett, Clark, Müller and Robbins, 2017). It is more likely for healthier foods to be chosen when serotonin levels are normal because it is common to choose foods high in sugar, salt or fat when in a depressive state due to lower levels of serotonin. However, SMI patients would not know what is healthy or not without proper education. If a food makes them feel good at one point, no matter what it was, they would choose it again. This could mean that their 'happy food' was a soda or a cookie because it was more flavorful than a salad. Ultimately, nutrition has its benefits for the body and mind, which is important for SMI patients to know.

Nutritional Benefits

Food is not listed as a medication. It is not a prescription at the pharmacy, but food is medicine for the mind and body. Adan et al. (2019) have found that nutritional psychiatry is a growing concept. Evidence indicated a strong association between a poor diet and the exacerbation of mood disorders and neuropsychiatric conditions. Usually, when a person goes a long period of time without eating, they feel low energy or sometimes even angry. Or people would feel lethargic after eating a meal high in fat and sodium. Essentially, it is about not letting blood sugar levels drop. In addition, more consumption of fresh fruits and vegetables instead of processed foods does increase positive moods and higher levels of well-being (Adan et al., 2019). Processed foods are preserved in cans to last long, but they lack the nutrients and benefits that raw fruits and vegetables offer. Fruits and vegetables that are canned have shown no benefits

towards positive mood outcomes or aid in the improvement of depressive symptoms (Brookie, Best, & Conner, 2018). It is important to know why fresh food is to be eaten and why processed/canned food shouldn't be eaten. Nutrition has many more benefits than what is publicly taught and it is important for SMI patients to understand the different concepts.

Nutritional psychiatry, as previously mentioned, is a growing field that focuses on the use of food and supplements to provide essential nutrients as an alternative treatment for mental illnesses (Cavaye, 2020). Psychiatrists' awareness of this topic is on the rise as the correlations have not been made in the past. Assistance from dietitians and nutritionists is requested to give their input and ideas for a structured format as nutritional psychiatry is not practiced in traditional medicine. Relying on food as medicine has a holistic approach, therefore people may feel uncertain towards it, especially in the U.S. However, mental health conditions cause brain cells to die from inflammation, and the inflammatory response comes from the gut, or gastrointestinal tract. The gut-to-brain health is an important concept to be understood.

Gastrointestinal Health. The gastrointestinal tract serves the body by digesting food, extracting nutrients, and absorbing energy. When there is inflammation in the brain, it is due to the lack of magnesium, omega-3 fatty acids, probiotics, vitamins, and minerals (Cavaye, 2020). Research shows that deficiencies in nutrients disrupts normal brain function for someone who has sustained a trauma. It is necessary to eat enough of the recommended nutrients because the intestine and the central nervous system (CNS) is the gut-brain axis (Fung, 2020). Anything that enters the digestive system, will alter the brain on how the body should function and react. In the gut, there is beneficial bacteria and harmful bacteria. Harmful bacteria, like a fungus called Candida and parasites, thrives from high sugar intake and when antibiotics are being taken. Another reason for prescription drugs to be minimized. Harmful bacteria increases digestive

issues, food sensitivity and makes it easier for other toxins to flow through intestines. Probiotic trials have proven that beneficial bacteria need to steadily grow in the gut for proper digestion, but also for depressive symptoms (Järbrink-Sehgal & Andreasson, 2020). Within 8 weeks, 10 clinical trials of 1,349 patients confirmed that probiotics significantly improved moods for individuals with pre-existing depressive symptoms. The second meta-analysis with 3 trials and 229 patients found an overall improvement with the probiotics in patients who were clinically depressed and on antidepressants. Probiotics, which are also in yogurts and fermented foods, along with other vitamins and minerals serve as supplements for the body while increasing their mental stability.

Vitamins and minerals. Studies have shown vitamins and minerals being essential for optimal health. Vitamins are consumed through food or supplements when not adequately met through meals. Studies have also shown that B-complex vitamins are required for optimal brain functioning and the production of neurotransmitters (Herbison et al., 2012). Low B-vitamin levels in adults has caused depression due to them not having energy to exert and go about daily activities. If SMI patients knew which kind of foods or supplements to take in order to increase vitamin B levels, then they would have energy to do daily activities and feel less depressed. If they are not aware of the benefits from B-vitamins, they will most likely not care to consume or choose foods with higher vitamin levels.

Moreover, vitamin C plays a role in brain function as it has antioxidants to protect from damage and toxicity. Dopamine also relies on vitamin C for chemical conversion to enhance the rewarding sensation (Plevin and Galletly, 2020). A serious vitamin C deficiency would result in Scurvy, which is due to malnutrition and if a SMI patient can be a risk if they have an eating disorder like anorexia. Restrictive diets lacking in fruits and vegetables would be a cause of

vitamin C deficiency, which is common in vulnerable populations. In addition, this study by Plevin and Galletly (2020) indicated that lack of vitamin C has no correlation with schizophrenia or bipolar disorder, but the deficiency is associated with depression and cognitive impairment, which can ultimately lead to more severe health complications if deficiencies continue. For this reason, to prevent more harm, SMI patients should have adequate vitamin C intake and know the primary sources to incorporate in their meals.

Magnesium is one of the most important minerals for optimal health, but many people are lacking it (Cavaye, 2020). Adequate supplementation is needed for people who drink excessive alcohol, high sodium and caffeine intake, have higher levels of stress, and those who take antibiotics and other drugs. Magnesium is often poorly absorbed and easily excreted from the bodies. A daily magnesium citrate supplementation led to remarkable improvement in depression and anxiety in people of all ages, gender, and severity of depression. It was also noted that improvement did not continue when the supplementation ended (Tarleton, Littenberg, MacLean, Kennedy, Daley, 2017). Participants were advised to include foods like almonds, cashews, tofu, brown rice, figs, collard greens, shrimp, beans, and garlic in their diet for optimal supplementation, if additional supplements in pill form were not being taken. Vitamin and minerals deficiencies could be avoided by educating SMI patients on which sources of food are best for them. This topic is complex, and the list of sources is extensive, but patients would have options to choose from while improving their health and lifestyle skills.

Macronutrients. There are 3 macronutrients to consume: carbohydrates, proteins, and fats. A varied diet of these, with an addition of other nutrients, will meet the essential dietary needs. The amount and frequency of these macronutrients may depend on the person and their medical history, but intake would require these to some amount. Carbohydrates are distinguished

into simple carbohydrates and complex carbohydrates. Complex carbohydrates are recommended as they enhance the production of chemicals that support the brain (Thomas, 2019). Simple carbohydrates, like sugar, increases glycemic index to detrimental levels so they are not beneficial to the body or brain. Complex carbohydrates include oats, brown rice, whole grains, and vegetables.

Protein is divided into two categories: plant-based and animal-based. Aside from diet, protein is found all throughout that body providing structure to hair, nails, skin, bones, and muscles. The Harvard School of Public Health (2020) discusses the importance of protein packages, which means to consider how much protein is in the source and what else is in it. For example, A 4-ounce broiled sirloin steak is a great source of protein with 33 grams, but it also has about 5 grams of saturated fat, which is unhealthy fat. A 4-ounce grilled salmon has about 30 grams of protein, naturally low in sodium, and contains 1 gram of saturated fat. A cup of cooked lentils, a complete plant-based protein, provides about 18 grams of protein and 15 grams of fiber, and it has no saturated fat or sodium. Plant-based protein will be the healthier options for SMI patients as they are at a higher increase of obesity and heart disease, which is why lessons on protein are of value. I actually presented a protein lesson at my fieldwork, which I will discuss further in the recommendations section. Furthermore, salmon and other fatty fish are also excellent sources of omega-3 fats, a type of fat that is especially good for the heart. Omega-3 is a fatty acid aiding in the prevention of schizophrenic symptoms. Lake (2017) argues that omega-3 is a preventative strategy for those in the early stages of psychosis as the fatty acid provides antioxidant effects to the brain.

At risk of food insecurity. Food insecurity in adults with mood disorders is another piece that public health should take into consideration. There have been links to the risk of SMI

in food insecure individuals. The impact of food insecurity on mental health is significant and may be attributed to its associations with poor diet lacking vitamins and minerals, consuming large amounts of red meat, intaking high levels of sodium and sugar, and psychological issues such as depression, eating disorders, and impaired cognition (Davison, 2015). Food insecurity leads to excessive worrying about where their next meal will come from. Whether they have to borrow money from someone, or “dumpster dive”, no person should have to experience it, but especially not an individual who is already mentally suffering. When an SMI patient is in inpatient care, they do not have to worry about their access to food, but could be a possibility when released. The difference between inpatients and outpatient care is further discussed in the recommendations sections that ties into why nutrition education is so important for this population.

Recommendations

Crestwood Behavioral Health

All mental health facilities in California need to aspire in improving or implementing a nutrition education curriculum to be included as a component of recovery. My recommendations are based on my four month experience at Crestwood Behavioral Health Inc. as my fieldwork placement. Crestwood is California's leading provider of mental health services, assisting thousands of people throughout counties in the state. Crestwood's mission is to "create a partnership with clients, employees, families, business associates and the community in caring for individuals of all ages affected by mental health issues" (Crestwood Behavioral Health, 2020). The recovery services provided are mind, body, and spirit wellness, wellness recovery action plan, dialectical behavior therapy, compassionate care, trauma-informed approaches, meaningful roles, peer providers, and homelike environments. I interned specifically for the nutrition and wellness initiative, under the mind, body and spirit wellness service. This initiative is responsible for sharing knowledge with patients and staff on how to improve and maintain their overall health.

Patients and staff are required to complete hours of health education training to ensure significance in their experience on the twenty-three campuses. Knowledge is spread with education through newsletters, presentations, and focus groups on various nutrition topics. Zumba is also offered, as this helps keep everyone active on a daily basis. This is their integration of improving mental and physical health simultaneously. Behavioral health nutrition is a growing concept that has been more seriously implemented over the years. However, the public should also be aware of how significant this field is so there could be more proper advocacy and implementation for nutrition education programs at facilities.

Crestwood conducted a study with the University of California Davis (See table 1) to prove their Heart Healthy Menu program effectiveness. They developed an innovative diet plan to improve weight and BMI, and decrease prevalence of metabolic syndrome in SMI patients. Life expectancy is 13-30 years shorter for SMI patients than individuals with no mental health illnesses. Sixty-percent of mortality is related to physical illnesses associated with obesity and metabolic syndrome (Papac, McDonald, Mataraso, & Yang, 2010). After 12 months of SMI patients consuming the Crestwood diet, there were significant improvements in their BMI. A normal BMI was recorded for more patients, with an improvement from 17% to 43%, that is a

significant increase (See figure). This study was conducted because previous studies have excluded obese and overweight people with mental illnesses; they have only shown that lifestyle interventions

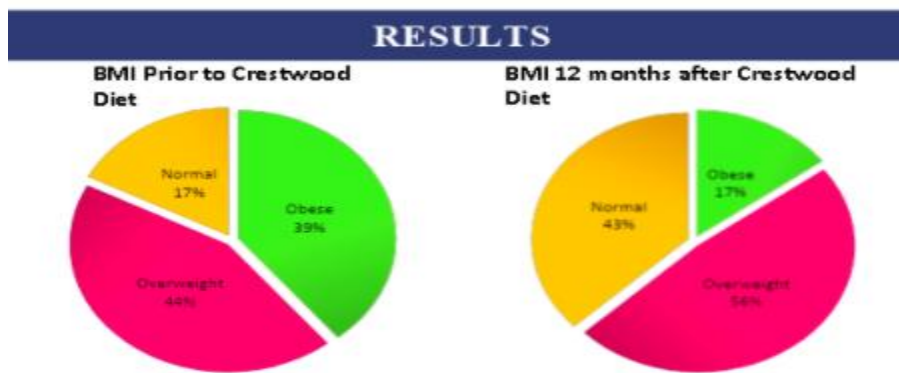


Figure 3. Comparison of BMI prior to and 12 months after Crestwood diet. At the beginning of the study, 39% of patients were obese with a BMI > 30, overweight with a BMI between 25-30, and only 17% were normal weight with a BMI < 25. After implementation of the Crestwood diet, only 15% were obese, 48% were overweight, and 37% were normal weight.

benefit people in the general population. This statement supports my recommendation of the need for more lifestyle and nutrition interventions for SMI patients who are recovering from their conditions and either maintaining or improving their physical health. Other facilities in California should use Crestwood’s curriculum as guidance and public health professionals should have the desire to help this population.

My scope of work. Although my capstone is on an aspect of my fieldwork experience, I still was given the opportunity to create my own educational material for Crestwood clients and staff. I researched through Crestwood's database to see what has been taught in the past in groups, and I determined that there was a missing educational piece on protein. I created a presentation and activity to share with clients. Due to the COVID-19 shelter-in-place order, I gave the presentation over zoom and two facilities joined with 5-10 clients each. The presentation was interactive as the clients were asking many questions and giving their input to the conversation. Their conditions and disorders were not a barrier for them. I recommend for SMI patients to always be included in intellectual conversations and have the opportunity to nutrition education, as I witness that these Crestwood clients took a lot of information away from my presentation.

Interprofessional teams. As there are many components of recovery from mental illnesses, and different people providing the services, nutrition education should be one of the components as well. The education for SMI patients should be more strongly advocated for because they have the abilities to expand their knowledge, regardless of the public's thoughts. This is a vulnerable population as they are dealing with severe disorders, so they should have numerous opportunities for recovery. As Teasdale et al. (2018) stated, expanding collaborative care by integrating dietitians and nutrition interventions for SMI patients would lead to greater success in improving mental and physical health. Patients would learn why certain foods are healthy and why others are not, and from there they will develop sustainable habits. Dietitians and occupational therapists are among the recommended professionals to be added onto the recovery staff as their training and skills bring different solutions for patients. This would also decrease the chance of prompting drug therapy. As pharmaceutical interventions weigh more

heavily on the mental state, other forms of therapy should be tried first. Expanding interprofessional teams in mental and behavioral health facilities could bring other people who are future public health or behavioral health professionals, like myself, the opportunities to practice in this field integration and provide SMI patients with the best quality care. My fieldwork experience was rewarding in that I have found a new interest.

Impacts and Implications

My recommendations would achieve the larger public health issue of bringing awareness to the importance of nutrition education for SMI patients who are recovering in facilities. Even for SMI individuals who are not in facilities, the recommendations would encourage more attention to be brought to this topic for this population. The general public believes SMI individuals are not capable of comprehending intricate topics such as nutrition (Clark, Bezyak, & Testerman, 2015). My recommendations would challenge this judgment as it is possible for this population to be in a classroom, engage in discussions, and interact with each other and staff members. I have witnessed this myself at Crestwood. It is unfair for SMI patients to be considered inferior to the general public. They are still humans who are capable of overcoming the obstacles that were dealt to them. There has to be public health professionals who are willing to care for this population as well, and who desire to offer holistic approaches.

Public health may argue that drug therapy is most effective for people who have personality disorders, become agitated easily, or are considered a danger to society. However, drugs alter the mind and the person loses the sense of self. The recommendations of this capstone are so that safe and healthy recovery is possible without pharmaceutical interventions. If prescription drug therapy is necessary, nutrition still would aid in improving chemical imbalances in the brain. Certain vitamins, such as vitamin C, prevent toxicity and damage to the brain. Certain foods boost levels of serotonin and dopamine. There will always be these alternatives for patients. While being educated on nutrition, SMI patients are also learning about improving their physical health and how to sustain healthy habits for the future.

Crestwood has several testimonials from patients and their families saying how having the accessibility to different forms of therapy was so helpful. They did not feel obligated to just

one way, or they did not feel as if they had to resort to prescription drugs. There was a situation that was described to me by the Zumba instructor that during one class, there was a patient who was up front and center, doing all of the movements and enjoying his time. After the class, another staff member told the Zumba instructor that the patient was almost put in restraint a few hours ago for being too aggressive. Somehow, the patient was able to do the Zumba class and he left the class calm and in smiles. This is the kind of impact that other forms of therapy do for this population; it gives them the chance to feel alive again. Those are the feelings public health professionals should strive for. By doing so, patients are able to learn what works for them and will carry the lessons with them for the rest of their lives.

Inpatient vs. Outpatient. While staying in facilities, patients are regularly monitored by staff. They are guided and encouraged throughout their recovery stages, with hopes of being released when stable. Staying overnight for a long period of time in a hospital or facility is also known as inpatient care. Being under close supervision, it is more unlikely for patients to misbehave or fall back to old habits. The public health should be concerned about what may happen during their outpatient care, as they are not closely monitored. Therefore, educating and guiding to sustainable, long-term habits during inpatient stays for SMI patients and crucial. Wu et al. (2017) shared their experience with inpatient care and the introduction of healthy-living behaviors. Prior to the pilot study, patients said their eating habits were already healthy and did not want to participate in the classes. When assessed for dietary intake, most patients were not restricting unhealthy foods or limiting their portions. During the focus groups, patients were having positive social interactions and were contributing to the discussion. Wu et al. (2017) reiterated that education on healthy-living behaviors are feasible and acceptable in inpatient settings. So many patients can benefit from having this opportunity to create sustainability.

The goal of this capstone project is to impact this vulnerable population in a positive way that will bring more recovery components to their process. SMI patients suffer for trauma and need guidance, they should not just be prescribed drugs and not have the chance to work on themselves. Nutrition education is an important recovery tactic as it allows patients to interact with staff and each other, learn why certain foods are of value to their condition, and they are able to maintain their physical health while improving their mental health. The general public will also be impacted by challenging their beliefs until they are proven otherwise. SMI patients are capable of participating in educational and physical classes.

Nutritional interventions have been proven to work, but western medicine has not accepted it as more than just a holistic approach. This capstone has shown that there is evidence behind the efficacy of nutritional interventions, physical interventions, the collaboration of dietitians and mental health specialists, and specific nutrients that are essential in the improvements of disorders and symptoms such as gut health, chemical imbalances, depression, and prevention of food insecurity also. SMI patients should be given the chance to this approach rather than just subsidising prescription drugs as they are capable of learning and sustaining healthy habits that will benefit them while in facilities and out of the facilities.

Conclusion

In the Western medicine world, it has become more difficult for nutrition education to be considered as an integral part of mental health recovery. The general public believes in not providing educational opportunities to SMI patients because they do not have the abilities to learn intricate topics. The purpose of this capstone's recommendations is to challenge the public's beliefs and prove that SMI patients are able to be educated and deserve the opportunity. I stand wholeheartedly with the recommendations as I have seen SMI patients engage in discussions and interact during sessions with my own eyes. It is important for nutrition education to be part of the recovery process and mental health teams should consider expanding their interprofessional teams to create a productive environment. These sustainable habits and life skills are gained through inpatient care for this population as they are guided through, whereas in outpatient settings, they would not be. Inpatient care should aim towards preparing patients if they are released from facilities. Mental health may be dominated by pharmaceutical interventions, but it is important for mental health facilities to implement nutrition education as a recovery component because SMI patients need to understand why nutrition is important for their mental and physical health.

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Appendix A: Competency Matrix

USF MPH Competencies	Notes/Activities
Assess population needs, assets and capacities that affect communities' health	Gave recommendations for the SMI population regarding the importance of nutrition education for recovery. I also developed an educational activity that I presented to facilities at Crestwood.
Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes	Proposed for mental health facilities in California expand their collaborative efforts by bringing dietitians and occupational therapists on board to bring different solutions for patients.
Communicate audience-appropriate public health content, both in writing and through oral presentation	Outlined, drafted and finalized Capstone paper including a literature review, recommendations and implications on a current public health problem. Created a slide deck based on the Capstone paper and delivered an oral presentation at Health Professions Day in front of an interprofessional audience.
Develop recommendations to improve organizational strategies and capacity to implement health policy	Presented how there needs to be more awareness around nutrition education as a mental health recovery component. This population is capable of learning and can benefit from the opportunity to develop sustainable habits.
Perform effectively on interprofessional teams	Worked with people of different professions at Crestwood in order to gain more experience and develop my curriculum for the presentation.