

Facilitators and Barriers to Healthy Diets & Active Lifestyle Among the SMI

Facilitators and Barriers to Adoption and Maintenance of Healthy Diets and Physical Activity among the Serious Mentally Ill, From Patients', Provider's and Families Perspectives:

A Qualitative Systematic Review Protocol

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## Introduction

There are 44.7 million adults in the United States (18.3%) suffering from any mental illness (AMI) but only 10.4 million of this population (4.2%) suffers from the serious mental illness.<sup>1</sup> Serious Mental illness (SMI) “is defined as a mental, behavioral, or emotional disorder resulting in a serious functional impairment, which substantially interferes with or limits one or more major life activities”.<sup>1(p.1)</sup> It generally encompasses diagnoses of disorders such as refractory depression, schizophrenia, schizoaffective disorder or bipolar disorder. Bartels observed that people with SMI experience “high rates of comorbid chronic health conditions, with major consequences on life expectancy, functioning, community tenure, and health care costs”,<sup>2(p.153)</sup> and economic costs as well. There is a life expectancy gap of 13-30 years between the SMI and the general population, from modifiable risks of physical health conditions,<sup>3</sup> likely attributable to the higher incidences of cardiovascular disease, metabolic disease, diabetes and respiratory illness in this population.<sup>4</sup>

The economic costs of SMI are significant. Insel's SMI economic cost assessment showed that mental health disorders contribute to 6.2% of the nation's spending on health care or about \$100.1 billion dollars in direct spending, while indirect costs amounted to \$24.3 billion in disability benefits and \$193.2 billion to lost income.<sup>5</sup> The SMI is the largest and fastest growing group of social security disability beneficiaries in the US.<sup>6</sup>

Substance use disorder (SUD) is a prevalent comorbidity among the SMI with an incidence rate of approximately 46%.<sup>6</sup> Saffer & Dhaval report that people who are diagnosed with mental illness, consume 69% of all alcohol, 84% of all cocaine and 68% of all cigarettes.<sup>7</sup> About 44% of those with SMI smoke, thus contributing to high rates of chronic obstructive pulmonary disorder and cardiovascular disease. Cardiovascular disease is responsible for 40-50% of deaths among those with schizophrenia and 35-40% of those with bipolar disorder.<sup>8</sup>

Obesity contributes to health disparities in the SMI population. The SMI is 1.5 to 2.0 times more likely to be obese, with obesity occurring in 41% of men and 50% of women.<sup>9</sup> Daumit et al. report that 80% of people with SMI are either overweight or obese, with increased mortality rate three times more than the general population.<sup>10</sup> The metabolic effects of second-generation antipsychotic medications contribute to obesity resulting in weight gain and hyperglycemia.<sup>9, 11</sup> Lack of physical exercise, sedentary lifestyle, and diets that are high in fat, and low in fiber, are among the health behaviors issues that further contribute to this obesity problem.<sup>4,8,12,13</sup>

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Sedentary lifestyles add to the problem of overweight and obesity in this population. The 2015-2020 physical activity and dietary guidelines of U.S. Department of Health and Human Services urge all American adults to avoid inactivity and engage in “at least 150 minutes per week of moderate-intensity physical activity and perform muscle-strengthening exercise 2 or 3 days a week.”<sup>14 (p.1)</sup> Like most Americans, the SMI population are non-adherent to these guidelines. Compared to the general population, the SMI are more sedentary, with only about 25% engaging in recommended amounts of physical activity.<sup>15</sup> For the SMI, walking is the primary if not the only form of exercise. They are less likely to engage in any form of moderate or high-intensity exercise<sup>9</sup> and have less access to exercise/physical fitness facilities.<sup>15</sup> Browne et al. advocated for “walking groups therapy” to facilitate physical exercise among the SMI population due to its accessibility, feasibility, and simplicity of implementation.<sup>13</sup> More so, ‘walking group therapy’ requires no equipment, can be conducted by a trained layperson and has the potential of breaking the barriers of social isolation that is common in the SMI population.<sup>13</sup>

Many SMI individuals are unable to work, do not drive and as a result, depend on public assistance for both their housing and feeding. The SMI are twice as likely to fall below the U.S. census poverty threshold as their peers without mental illness<sup>16</sup>, and their choices of housing, transportation and diets are limited. Other barriers to adequate dietary intake include: psychotic delusion about food, fear, and social isolation, forgetting to eat due to poor memory, the absence of specific cultural foods in inpatient settings, the good or poor appetite for food due to medications and lack of motivation due to the illness.<sup>17</sup>

In light of the high incidence of co-morbid conditions, overweight status, obesity and challenges to physical activity and healthy dietary intake, it is critical that psychiatric services integrate with primary care and prevention. Bartels cautions that the success of a lifestyle intervention program in improving physical fitness and reducing obesity among the SMI depends on the program’s duration and design.<sup>18</sup> Adaptations recommended for the SMI include longer duration of interventions, increased and frequent face to face contacts,<sup>19</sup> the use of trained professionals to deliver manualized programs or activity-based programs such as exercise and nutrition or a combination of physical activity and education.

Improved nutrition and physical activity may not only be beneficial physically but may also have a positive impact on mood and emotional status. The field of nutritional psychiatry has noted that the lack of essential nutrients contributes to the onset of poor mental health manifesting as anxiety, depression, bipolar disorder, schizophrenia, and ADHD. It stresses that the foods we eat directly affect the structure and function of our brains and eventually our mood<sup>20</sup> which is critical in both motivation and physical activity. The psychological benefits of exercise have been noted to be comparable to that of psychotherapy in two meta-analyses of outcomes of patients with depressive symptoms and have been credited for improving secondary symptoms such as low self-esteem and social withdrawal.<sup>21, 21a, 21b.</sup> Ward and colleagues noted that prior life intervention programs for the SMI population were largely based

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on extrapolations and assumptions (de-novo) of health promotion designs which are deemed appropriate for SMI, instead of known facts from working with this group.<sup>22</sup> Rebar and Taylor observes that the overall efficacy of physical activity interventions depends on persons' behavioral dispositions but for the SMI there are distinct facilitators and barriers to physical exercise that are not included in current behavior change theories and standard interventions for the general population.<sup>23</sup> Therefore, understanding these facilitators and barriers from the patients' perspective is critical in designing a successful and acceptable intervention program for this population.

The JBI Database of Systematic Reviews and Implementation Reports, Cochrane, PubMed and CINAHL were searched for existing reviews and four reviews were found. One of the reviews examined the impact of exercise therapy in the adults with SMI.<sup>24</sup> In this review, eight randomized control studies (RCT) were identified and six compared exercise and usual care. One study compared two forms of exercise—cycling program with muscle strengthening and toning exercise, while the remaining study assessed the impact of adding specific exercise advice and motivational skills to a simple walking exercise routine. The review found that exercise results in modest improvement on exercise activity but has no noticeable impact on symptoms of mental illness, BMI, and weight.

The second review examined motivating factors and barriers towards exercise in the SMI.<sup>25</sup> Out of twelve (12) studies identified, nine (9) were reviewed. While physical health improvement accounted for 91% of the overall primary incentive to participate in physical exercise, the review specifically identified weight loss as the most popular reason (83%) for engaging in physical exercise. The second and third motivating factors were psychological, and they are an improvement in mood (81%) and reduction in stress (78%). For the barriers, low mood and stress were identified as the most prevalent (61%) followed by the most significant socio-ecological factor, lack of support (50%).

The third review looked at already tested lifestyle interventions, with the goal of using it to improve the physical health of adults with SMI and it was done by rating the quality of different methods of lifestyle interventions outcome.<sup>26</sup> The study reviewed twenty-three articles including single-group reports, quasi-experimental studies and randomized control trials (RCT). Examining characteristics of interventions, behavioral techniques were used by most of the studies to increase both dietary habits and level of physical activity. The objectives of most of the reviewed studies were to improve knowledge of weight management, exercise, physical activity, dietary /nutrition skills and healthy eating, and health promotion. The impact of lifestyle interventions on health outcomes especially weight loss and modifiable risk factors for physical health problems such as cardiovascular diseases and diabetes were examined. The review noted underrepresentation of racial and cultural minorities in the studies reviewed which limits its generalizability.

The fourth review was a narrative synthesis of quantitative, qualitative and mixed methods studies on the incentives and barriers to lifestyle interventions for the SMI, especially persons with schizophrenia.<sup>27</sup>

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Fourteen studies reviewed were of different designs: 2 systematic reviews, 5 randomized control trials, 1 quasi-experimental study, 3 qualitative studies, 2 observational studies and one literature review. While urging nurses and other healthcare professionals to consider issues that encourage and discourage the SMI from participating in lifestyle interventions. The authors noted the need for further studies on possible barriers and incentives from patients' perspective.

There is a common theme in all the reviews and it is the benefits of these lifestyle interventions in weight management and reduction of modifiable risks of cardiovascular disease, diabetes, and metabolic issues. However, most of the reviews identified seem to focus on health promotion approaches and the perspectives of the care providers but none from the patients' perspective. Therefore, this review distinctively will be focused on the experiences and perspectives of the SMI population on the adoption and maintenance of healthy physical and dietary lifestyles. The complexity of the health behavior challenges in the SMI population calls for stronger research-based evidence. Again, an understanding of the perceptions/experiences of the SMI should guide the design and testing of acceptable lifestyle intervention approaches for this population.

### Review Question / Objectives

This systematic review will address the barriers and facilitators surrounding the adoption and maintenance of healthy diet and physical activity among the seriously mentally ill (SMI) population. Specifically, this review will examine: (1) the barriers and facilitators to adopting healthy dietary habits and active lifestyle behaviors, and (2) the responses of the SMI population to different approaches that have been employed in addressing these challenges

**Keywords:** Physical - Activity; Healthy Diets; Serious Mental illness; Barriers and Facilitators.

### Inclusion Criteria:

#### Population

This systematic review will consider studies that deal with adult individuals (18 years of age or older), suffering from a serious mental illness (SMI). For this review, SMI is the NIH and NIMH definition, that Serious Mental illness (SMI) "is a mental, behavioral, or emotional disorder resulting in a serious functional impairment, which substantially interferes with or limits one or more major life activities".<sup>1(p.1)</sup>

**The phenomenon of Interest:** This review will examine the facilitators and barriers to healthy diets and active lifestyle among the SMI.

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**Context:** This review will consider SMI individuals that reside in the community and are being treated with either first or second-generation antipsychotic medications.

**Types of Studies:** This review will consider qualitative studies published in English including designs such as phenomenology, grounded theory, action research, personal narratives, mixed method and ethnographical studies. In the absence of relevant research studies, opinion papers, reports and commentaries will be considered.

**Search Strategy:** The search strategy is threefold and is aimed at reviewing both published and unpublished studies written in English. An initial search of PubMed and CINAHL databases will be done using the initial keywords. This will be followed by the analysis of text words from both the titles and abstracts and the index terms. Phase two of the search will involve a more extensive database-specific search using the additional terms. Appendix A provides a sample search for PubMed. The third phase of the search strategy will involve citation chasing of selected articles. Hand searches of American Psychiatric Association (APA) profile of journals will also be conducted.

Initial Keywords that will be used: Healthy diets, Active Lifestyle, Physical Activity; Exercise, Diets; Serious Mental illness, Schizophrenia, Bipolar Disorder, Major Depressive Disorder, Schizoaffective, Barriers and Facilitators, Adult, Refractory depression, Health Promotion

### **Information Sources:**

The databases included in the search are:

- CINAHL
- PubMed
- Scopus
- Psych Info
- Web of Sciences

Search for unpublished studies will include:

- Virginia Henderson Nursing Library.
- ProQuest Dissertation and Theses Global.
- Robert Wood Johnson Foundation Research and Publications.
- Articles on Nutritional Psychiatry – an emerging/evolving discipline.

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Grey Literature search include Greynet at <http://www.greynet.org>

**Study Selection:** Following database searches, all identified citations will be loaded to Endnote X 7 for windows and duplicates will be removed. Titles and abstracts will be screened by two independent reviewers for assessment against the inclusion criteria. Relevant studies will be retrieved in full. The full text of selected papers will be assessed in detail against the inclusion criteria. Papers not meeting the inclusion criteria will be recorded in an exclusion table.

### **Assessment of methodological quality:**

The assessment of the methodological quality for selected studies will be done independently by the two reviewers and in duplicate, while methodological validity is assessed using Joanna Briggs Institute's qualitative review checklist prior to inclusion in the review. In order for a study to be selected for inclusion, the two independent reviewers must rate "yes" to questions two, four and eight on this JBI qualitative review checklist. Question Two, "Is there congruity between the research methodology and the research question or objectives?" <sup>28(p.3)</sup> Question Four, "Is there congruity between the research methodology and the representation and data analysis?" <sup>28(p.3)</sup> and Question Eight, "Are participants, and their voices, adequately represented?" <sup>28(p.3)</sup> Studies which meet this initial screen, will be compiled for full appraisal and studies that do not meet these criteria will be excluded and reasons for exclusion will be included in the exclusion table. Disagreements between the two reviewers will be resolved through discussion with the third reviewer.

**Data extraction:** Data extraction will be from included studies in the review by the two independent reviewers using JBI- qualitative review data extraction tool. Separately, each reviewer will extract findings while assigning validity and credibility to it. Extracted data will include specific details about the study methods, the population, context, phenomenon of interest and conclusions specific to the review question. It will include findings and if available, relevant information for each finding. Authors of primary relevant papers will be contacted to request missing or additional data, where necessary.

**Data Synthesis:** The JBI data extraction template for qualitative evidence will be used to pool qualitative findings.<sup>29</sup> These groups are then combined with statements generated to represent the categorized groups. Overall differences and similarities in concepts, languages and other ideas will be noted. Lastly,

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categories will be grouped for common meaning into final meta-synthesis statements providing meaningful guides to inform evidence-based practice.

**Conflict of interest:** None.

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**Appendix A: Search Strategy Using PubMed.**

PubMed search:

("Healthy Diet"[Mesh] OR healthy diet) OR ("Exercise"[Mesh] OR active lifestyle OR exercise OR physical activity) AND ("Mental Disorders"[Mesh] OR serious mental illness OR severe mental illness OR schizophrenia OR bipolar disorder OR refractory depression OR schizoaffective disorder OR major depressive disorder) AND ("Adult"[Mesh] OR adult)