

Commentary

Metabolic syndrome, serious mental illnesses & lifestyle

Lifestyle is known to be associated with the good health or disease states. Metabolic syndrome (MetS) in general, is a major public health problem as reflected by the estimated prevalence of approximately 34.7 per cent in adults in the United States¹ to 11.2 per cent in a study from Chennai, India². The combination of metabolic disorders, such as dyslipidaemia, hypertension, impaired glucose tolerance, compensatory hyperinsulinaemia and the tendency to develop fat around the abdomen is a reflection of lifestyle of people who develop the disorders. MetS is a chronic and progressive condition that influences physical, mental and sexual functions.

Although MetS is being studied quite extensively, but reports on the association between psychological factors such as health-related quality of life (QOL) and MetS at the population level are scarce. QOL is an important health outcome and considers all health (physical and mental) and socio-economic dimensions. Lifestyle factors such as smoking, physical inactivity, obesity and percentage of dietary calorie intake as carbohydrate are linked with the presence of MetS^{3,4}. The evidence for this relationship in serious mental illnesses is limited.

Severe mental illness is associated with a three-fold increased risk of premature death and it shortens life expectancy by approximately 10-20 yr⁵. While suicide accounts for the highest relative risk of mortality, being up to 20-fold commoner than among the general population, a number of physical illnesses also occur more frequently in people with severe mental illness, especially schizophrenia and bipolar disorders with increased mortality, being two or three times as high as that in the general population⁶. Diabetes and hypertension are implicated in the shortened lifespan of patients with schizophrenia. The

relationships between cardiovascular disease, diabetes and medication use for those diagnosed with bipolar disorder and schizophrenia has been established in several studies. In a meta-analysis of 18 studies, 60 per cent of excess mortality in schizophrenia was attributable to physical illness, with cardiovascular disease being the major cause⁵. Prevalence of MetS in patients with schizophrenia varies between 8.9 and 68 per cent, and is significantly higher in patients with schizophrenia compared to the healthy control group⁷. Metabolic syndrome, as a whole or its individual components, is seen to contribute to the physical morbidity of persons with serious mental illnesses. While obesity and atypical antipsychotics are well-established risk factors⁶, the role of other lifestyle factors have not been examined systematically.

A pharmacogenetic risk has been suggested for metabolic syndrome in persons with serious mental illnesses⁸. However, a poor diet and unhealthy lifestyle choice, such as cigarette smoking and lack of physical activity, are major cardiovascular disease contributors and often seen in these patients. In addition to understanding the medication and genetic risks associated with cardiovascular and metabolic disorders in mental health, understanding overall lifestyle characteristics and quality of life within populations with a serious mental illness is critical to prevent premature death and develop individualized interventions to prevent metabolic syndrome. The combination of a sedentary lifestyle, poor diet and medication-induced weight gain in individuals with serious mental illness makes them more prone to cardio-metabolic risks than those in the general population⁶.

Several studies point to the role of incorporating physical activity programmes with mental health services. A review of evidence supporting the need

for interventions to promote physical activity among persons with serious mental illness, reports that the effects of lifestyle modification on chronic disease outcomes are large and consistent across multiple studies⁹. Randomized control trials (RCTs) of wellbeing training¹⁰ or motivational intervention¹¹ compared with standard care have shown improved rates of self-reported health status or a significantly increased attendance to a physical exercise programme. Further, several naturalistic studies also provide evidence that wellbeing support programmes, holistic approaches or exercise can generally improve physical health and cardiovascular fitness in patients with severe mental illness¹². There is tentative evidence that participating in exercise is associated with an alleviation of negative symptoms associated with schizophrenia, such as depression, low self-esteem, and social withdrawal. There is less evidence that exercise may be a useful coping strategy for dealing with positive symptoms, such as auditory hallucinations¹³.

It is widely assumed that metabolic syndrome is largely associated with poor dietary habits¹⁴, this has been underinvestigated in those with serious mental illness. Research on dietary management has been mostly behavioural interventions targeting weight reduction in patients with serious mental illnesses on antipsychotic treatments, leading to mixed results. Diet, exercise¹⁵ and individual nutritional education¹⁶ have shown to attenuate weight gain, especially resulting from antipsychotic treatment. The evidence for weight reduction by calorie restriction only is limited. Several other interventions, including behavioural components and psycho-education, have shown various degrees of effectiveness in dealing with overweight and obesity and improving antipsychotic-induced weight gain. A review of research on interventions for weight reduction in schizophrenia patients¹⁷ notes that behavioural therapeutic interventions, in particular, are understudied. A small pilot study in patients with schizophrenia or schizoaffective disorder has demonstrated that behavioural therapy that utilizes stepped interventions, involving body weight self-monitoring, diet, and exercise, can prevent weight gain in patients initiating treatment with second generation antipsychotics (SGAs)¹⁸. Similarly, comprehensive weight management programmes, including diet, exercise and counselling on lifestyle modifications, can also prove helpful in reducing weight, as shown by a naturalistic study¹⁹ and an RCT²⁰. However, another

naturalistic study shows no significant outcomes following a similar nurse-led programme in patients with schizophrenia spectrum disorders²¹.

Two large studies on structured wellbeing programmes (targeting both physical and mental health with emphasis on healthy lifestyle promotion) have shown weight reduction or improvements in lifestyle habits^{22,23}. Smith and colleagues²² employed a multistep approach to provide a combination of assessment of physical health, lifestyle and medication side effects; feedback offered to clients; and referral to weight management/physical activity groups in a total of 956 outpatients with severe mental illness lasting for up to two years. They noticed significant improvement in levels of physical activity, smoking, diet and self-esteem, though there were no changes in mean body mass index (BMI) or cardiovascular risk factors. Lindenmayer and colleagues²³ described a 36-wk inpatient programme for 275 chronically ill patients, offering a combination of psychoeducation, dietary advice and physical exercise and targeting primarily obesity and metabolic abnormalities. They found a significant decrease in BMI, especially in patients with diabetes.

The study by Malhotra and colleagues²⁴ in this issue, has come in at a time when there is increasing focus on the benefits of lifestyle changes in the management of diabetes and reducing cardiovascular disease risks. This study has provided insights into the various lifestyle factors that are associated with MetS in persons with serious mental illnesses. However, given the limitations such as the small sample size or the use of tools which have not been subjected to standardization for the Indian population, the findings of this study would need to be replicated by studies using more stringent methods. Research is also needed to validate standard screening criteria used in the general population for persons with serious mental illnesses.

Metabolic syndrome is a complex, lifestyle-dependent illness. Clinicians and other care providers need to be sensitive to the physical health of individuals. History and examination of individuals being reviewed for mental health status should include physical health parameters (weight, blood pressure, waist circumference) as well. Laboratory measures for blood sugars, glycosylated haemoglobin and lipid profiles need to be done periodically. Health care professionals

need to help people understand the potential benefits that may result from periodic screening, introduction of dietary patterns, exercise, and yoga and support in adopting and adhering to lifestyle modifications required to maintain physical health of persons with serious mental illnesses

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