

Commentary

Promoting weight loss in people with schizophrenia: what do we still need to learn before implementing lifestyle interventions?[†]

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Holt *et al* show that a lifestyle intervention did not reduce weight in people with schizophrenia. The STEPWISE trial casts a critical focus on the challenges of improving physical health in people with schizophrenia. The trial underpins efforts to maintain momentum in overcoming the unacceptable health inequalities in this population.

Declaration of interest

None.

Keywords

Schizophrenia; randomised controlled trial; psychosocial interventions.

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Findings from previous research

There is unequivocal, high-quality evidence that weight reduction interventions with or without advice for increasing physical activity and/or attendance at a physical activity programme can lead to significant weight loss and reduce all-cause mortality in the general population with obesity.⁵ Furthermore, lifestyle interventions to support dietary change and physical activity have proven efficacy in reducing weight and sustaining weight loss in high-risk groups such as people with impaired glucose regulation (a precursor to diabetes), and this evidence underpins roll-out of national diabetes prevention programmes.

However, evidence that such approaches are effective in reducing weight in people with serious mental illness is mixed. Broadly, non-pharmacological interventions that include nutritional and/or exercise interventions and cognitive-behavioural therapy have been shown in meta-analysis (17 studies; $n = 810$) to effectively reduce weight and body mass index in people with schizophrenia-spectrum disorders, with benefits for weight enduring for 12 months.⁶ More recently, Naslund *et al*⁷ have shown in meta-analysis (17 studies; $n = 1968$) that lifestyle interventions that included standard dietary advice and instruction and encouragement to regularly increase physical activity were associated with small but significant treatment effects for weight loss over the short term (≤ 6 months) and longer term (≥ 12 months). However, only two of the six trials included in the review by Naslund *et al* that measured outcomes at 12 months demonstrated significantly positive effects for weight loss. These two trials – the ACHIEVE and STRIDE trials – were conducted in the US and offered intensive lifestyle interventions that drew on behavioural approaches known to be effective for weight loss and reducing cardiovascular risk in the general population, such as the Dietary Approaches to Stop Hypertension (DASH) diet. By contrast, a recent Danish trial ($n = 428$) that tested a similarly intensive programme of lifestyle coaching plus care coordination in people with schizophrenia-spectrum disorder and abdominal obesity failed to show any benefit over 12 months in 10-year cardiovascular disease risk or for any secondary outcomes, including weight reduction. This suggests that individual behaviour-change interventions might not always be the most appropriate and effective way to support weight loss in vulnerable people with schizophrenia.⁸ There are other interventions that can be considered for this population, either as alternatives or in combination with a lifestyle

Mortality rates in people with schizophrenia and schizoaffective disorder are at least two times greater than the rate in the general population, with life expectancy reduced by up to 20 years.¹ Cardiovascular disease accounts for the majority of premature death in this population. The path to premature cardiovascular disease may be heralded by the onset of psychosis and the initiation of antipsychotic treatment, which is associated with aggressive early weight gain, averaging 12 kg in the first 24 months of treatment, and other metabolic disturbances. This means that by age 40, people with schizophrenia have a threefold increased rate of metabolic syndrome.² Obesity is twice as prevalent in this population and it contributes to excess mortality from cardiovascular disease.³ Additionally, unhealthy lifestyles due to sedentary behaviour and poor diet also contribute to high rates of obesity and risk of weight-related conditions such as diabetes, hypertension and dyslipidaemia in people with schizophrenia.

Reducing the so-called ‘mortality gap’ in people with serious mental illness is a major public health policy goal. To mainstream the issues faced by people with serious mental illness, National Health Service (NHS) England has stated that by 2020/21 at least 280 000 people with illnesses such as schizophrenia should have their physical health needs met by increasing early detection and expanding access to evidence-based physical care assessment and National Institute for Health and Care Excellence (NICE)-recommended lifestyle interventions.⁴ However, much of the guidance targeted at reducing physical risk factors and promoting behaviour change is not tailored to meet the needs of people with serious mental illness and there is considerable scope to enhance the evidence base to support implementation of effective lifestyle interventions.

[†] See this issue.

approach. These include metformin, which lessens weight gain and metabolic disturbance in people with serious mental illness and is already recommended by NICE for the prevention of diabetes when other measures prove unsuccessful. Selecting an antipsychotic medication associated with fewer metabolic side effects may also be considered when appropriate, although this needs to be balanced against the need to manage psychotic symptoms.⁹

Taking their lead from the success of the US trials and recognising that lifestyle interventions are recommended for people taking antipsychotics, a UK team led by Professor Richard Holt took up the challenge to develop and test a structured education lifestyle programme (STEPWISE) for weight loss in people with psychosis that stood the greatest chance of being implementable in routine care.

Findings from Holt *et al*

In this issue, Holt *et al* describe the results of a randomised controlled trial of STEPWISE, an intervention that included an initial 4-weekly facilitated foundation course of group-based activity focusing on identifying and encouraging (using non-judgemental styles) ways to achieve dietary and physical activity goals. One-to-one telephone support was used throughout the intervention period of 12 months. Booster sessions in groups took place at 4, 7 and 10 months, with total contact time comparable to that given in NHS Diabetes Prevention Programmes. Participants had schizophrenia, schizoaffective disorder or first-episode psychosis with a mean age of 40 years and they were overweight at the point of recruitment. Importantly, the design of the intervention adopted gold-standard approaches including co-design with patients and prototyping, piloting and iterative redesign. The intervention drew on the 'Let's Prevent Diabetes' programme developed by the Diabetes Education and Self-management for Ongoing and Newly Diagnosed (DESMOND) team and embraced established psychological theory about behaviour change with a focus on food and physical activity, psychological factors that underpin motivation to manage weight and the challenges of living with psychosis. The control group received standard printed advice about lifestyle and the risks of weight gain.

Participants were randomly allocated to the lifestyle intervention or the control group and were followed up at 12 months for change in weight (kg). At 12 months there was no difference in mean weight reduction between the intervention and control groups, nor was there any difference in weight within either group, suggesting that there was no sustained change in diet or physical activity. Although this result is disappointing and unexpected given the track record of previous weight loss interventions in people with serious mental illness, it might partly be explained by the fact that the STEPWISE trial population was recruited from mental health services outside of primary care and $\geq 50\%$ were treated with medications that have a high risk of weight gain (i.e. clozapine and olanzapine). Additionally, patients recruited from this context may also have more severe symptoms and are potentially more likely to have symptoms that persist and reoccur more commonly than the 20–30% of people with serious mental illness supported in primary care only, or those who have limited contact with their mental health provider. Contrarily, these factors might have accounted for a patient population that was most likely to benefit and most likely to be motivated to achieve weight loss.

Given that fidelity was good (with more sessions reported as facilitative than didactic) and intensity was driven by the need to offer an intervention likely to be scalable in routine settings, it is perhaps instructive to consider whether providing support to make lifestyle changes at the point of diagnosis of psychosis may prove more effective. The majority of STEPWISE participants had

well-established psychosis (only 6% of trial participants had been receiving treatment for less than 1 year) and the intervention targeted people who were already overweight. There is growing evidence that lifestyle interventions are acceptable to people with first-episode psychosis – with goal setting, social opportunities and progress monitoring being especially valued – even in the face of no weight loss.¹⁰ However, no large-scale lifestyle intervention trial has been conducted to address cardiovascular risk in this population. For this, facilitators would have to be skilled in personalising interventions and there could be scope to build in the use of digital applications to support progress monitoring and feedback.

Conclusion

There is a risk that as lifestyle interventions are scaled up for the general population, we will see widening inequalities for people with serious mental illness unless, as Holt *et al* suggest, we continue to take up the challenge of improving their physical health and associated poor lifestyle. The STEPWISE trial makes an important contribution to maintaining a critical focus on efforts to improve the physical health of people with serious mental illness, which remains a major challenge of our times.

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References

- Chesney E, Goodwin GM, Fazel S. Risks of all-cause and suicide mortality in mental disorders: a meta-review. *World Psychiatry* 2014; **13**: 153–60.
- De Hert MA, van Winkel R, Van Eyck D, Hanssens L, Wampers M, Scheen A, et al. Prevalence of the metabolic syndrome in patients with schizophrenia treated with antipsychotic medication. *Schizophr Res* 2006; **83**: 87–93.
- Dickerson FB, Brown CH, Kreyenbuhl JA, Fang L, Goldberg RW, Wohlheiter K, et al. Obesity among individuals with serious mental illness. *Acta Psychiatr Scand* 2006; **113**: 306–13.
- Mental Health Task Force. *The Five Year Forward View for Mental Health*. Mental Health Task Force, 2016.
- Ma C, Avenell A, Bolland M, Hudson J, Stewart F, Robertson C, et al. Effects of weight loss interventions for adults who are obese on mortality, cardiovascular disease, and cancer: systematic review and meta-analysis. *BMJ* 2017; **359**: j4849.
- Caemmerer J, Correll CU, Maayan L. Acute and maintenance effects of non-pharmacologic interventions for antipsychotic associated weight gain and metabolic abnormalities: a meta-analytic comparison of randomized controlled trials. *Schizophr Res* 2012; **140**: 159–68.
- Naslund JA, Whiteman KL, McHugo GJ, Aschbrenner KA, Marsch LA, Bartels SJ. Lifestyle interventions for weight loss among overweight and obese adults with serious mental illness: a systematic review and meta-analysis. *Gen Hosp Psychiatry* 2017; **47**: 83–102.
- Speyer H, Christian Brix Nørgaard H, Birk M, Karlens M, Storch Jakobsen A, Pedersen K, et al. The CHANGE trial: no superiority of lifestyle coaching plus care coordination plus treatment as usual compared to treatment as usual alone in reducing risk of cardiovascular disease in adults with schizophrenia spectrum disorders and abdominal obesity. *World Psychiatry* 2016; **15**: 155–65.
- Mizuno Y, Suzuki T, Nakagawa A, Yoshida K, Mimura M, Fleischhacker WW, et al. Pharmacological strategies to counteract antipsychotic-induced weight gain and metabolic adverse effects in schizophrenia: a systematic review and meta-analysis. *Schizophr Bull* 2014; **40**: 1385–403.
- Pedley R, Lovell K, Bee P, Bradshaw T, Gellatly J, Ward K, et al. Collaborative, individualised lifestyle interventions are acceptable to people with first episode psychosis; a qualitative study. *BMC Psychiatry* 2018; **18**: 111.