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Nottinghamshire Healthcare NHS
NHS Foundation Trust

Has the Coronavirus lockdown had an impact on the weight and body mass index of medium secure forensic patients?

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Background

Arnold Lodge

Arnold Lodge is a seven ward, 100-bed medium secure hospital in the East Midlands covering three care streams; Male Mental Illness (MMI), Male Personality Disorder (PD) and a Women's service that provides both a standard Women's (WS) and an Enhanced Women's Service (WEMS).

Section 17 leave and the COVID-19 pandemic

Many detained patients, from all three care streams in the hospital, have Section 17 leave (i.e. where their responsible clinician grants escorted or unescorted leave from the hospital). Section 17 leaves include walking trips through the local area, community work and sport placements and often include shopping or eating out.

In response to the COVID-19 pandemic, it was agreed by the hospital management team that all Section 17 leave would be suspended throughout the unit in concordance with national lockdown restrictions introduced on the 23rd March 2020.

Routine physical health monitoring

The monitoring of physical health is essential for patients in psychiatric care. Many studies have indicated that individuals with severe mental illness (SMI) are at a higher risk of poor physical health[1]. Major causes of death in SMI are due to chronic conditions such as diabetes and cardiovascular disease[2]. Both these diseases are closely linked with, and exacerbated by, the negative consequences of elevated weight. In addition, many psychotropic medications can lead to increased appetite and weight gain; it is therefore important to monitor weight and body mass index (BMI) in those with SMI. Arnold Lodge monitors patient weight and BMI every month alongside vital sign monitoring and has the ability to refer to a General Practitioner and Dietician for any concerns.

Aims of the study

It was theorised that due to lack of leave, patients may become more sedentary and thus put on weight, putting them more at risk of physical health complications.

This study aimed to establish whether those patients' previously engaging with their Section 17 leave, were negatively impacted by the lockdown restrictions in terms of their BMI, and potentially, their overall physical health.

Methods

Section 17 leave forms in each ward were reviewed to identify all patients in the hospital who had leave to the local area or beyond at the time of lockdown (23rd March 2012). Electronic patient records and nursing records were then reviewed to find each patient's weight before and during lockdown; the most recent weight was reported in August 2020. All but one of the patients had agreed to being weighed during this time, thus 26 patients were included in the study.

For those patients those who had made weight losses, electronic records were scrutinised to ensure there were no confounding factors such as physical illness. This was ruled out in all cases.

Anonymised data was collated into a Microsoft Excel spreadsheet and analysed.

Approval to undertake this service evaluation was provided by the Research and Evidence department of Nottinghamshire Healthcare NHS Foundation Trust.

Body Mass index (BMI)

Body Mass Index (BMI) is the value obtained by dividing an adult's weight in kilograms by their height in metres squared. The BMI can give an indication as to how healthy a person's body mass is. It is classified by the World Health Organisation[3] as follows:

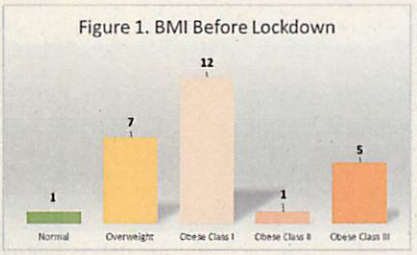
Class	BMI
Underweight	< 18.5
Normal	18.5 - 24.9
Overweight	25.0 - 29.9
Obese Class I	30.0 - 34.9
Obese Class II	35.0 - 39.9
Obese Class III	> 40.0

Results

BMI Before Lockdown

The distribution of patient BMIs before lockdown is shown in Figure 1. Patient BMI prior to lockdown ranged from 24.6 (normal) to 58.5 (Obese Class III) and most patients fell within the Obese Class I. Only one patient had a normal BMI.

Figure 1. BMI Before Lockdown

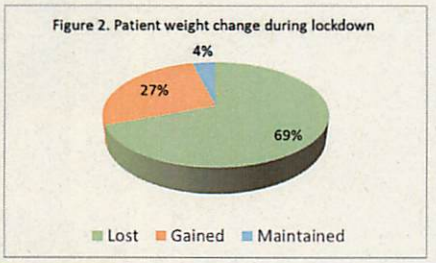


Results

Weight change over lockdown

Figure 2. shows that of the 26 patients included in the study, 18 (69%) had lost weight since the beginning of lockdown, seven (27%) had put on weight and one patient (4%) had maintained the exact same weight. Of the 18 patients who had lost weight, the mean weight loss was 4.97kg with a range from 0.1kg to 28kg. The mean increase of weight from the seven gainers was 0.87kg with a range of 0.1kg to 2.9kg.

Figure 2. Patient weight change during lockdown



Results

BMI After Lockdown

The distribution of patient BMIs after lockdown is shown in Figure 3. The majority of patients (n=19) stayed within the same BMI classification; this included 13 who had lost weight, one who stayed the same weight and five who had gained weight.

Five patients who lost weight moved down one BMI classification; of these, two were now of a normal BMI. The patient who lost the most amount of weight (28kg) moved down one classification and was close to moving down two at a BMI of 25.2. One patient who gained 0.9kg moved up one classification from Obese Class I to II. One patient who gained 2.9kg moved up two classifications from Overweight to Obese Class II.

Figure 3. BMI After Lockdown

Discussion & Conclusion

Patients in Arnold Lodge can have escorted and unescorted leave away from the unit for significant periods every day. It was theorised that when the lockdown measures were put in place and all Section 17 leave was cancelled, those patients who would usually have access to this leave would become more sedentary and their weight would therefore increase. The opposite has been found in this study and most patients lost weight over a period of approximately six months.

One explanation for this finding could be that over lockdown the patients had less access to snacks than they would normally be able to buy when on local or shopping leave. Though patients could still access the unit shop and purchase food items, it is likely the patients' calorie intake over a week could have significantly reduced. Likewise, as visits from friends and family were also stopped, there could have been a reduction in food treats brought in by visitors.

With regards to exercise, although the gym was closed to patients, in accordance to the lockdown measures, it is possible more activities had been put on by the Sports and Leisure team to encourage exercise and ensure physical fitness was not depleted over the lockdown.

In conclusion, many patients have benefitted physically (in terms of weight/BMI changes) from the impositions that lockdown has placed on their regular routines. Future study is required to identify ways in which our patients can be supported to manage their weight more optimally once lockdown restrictions are lifted.

References:

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