A captive audience: Tackling diabetes and obesity in the prison setting

Keith Booles

Citation: Booles K (2013) A captive audience: Tackling diabetes and obesity in the prison setting. *Diabesity in Practice* **2**: 142–7

Article points

1. The prison population is a complex group of people that may be vulnerable to the complications created by obesity and diabetes.
2. Many prisoners will not have had access to good healthcare before they enter prison and may be living with an undiagnosed non-communicable diseases such as diabetes.
3. Diabetes and obesity prevention should be a healthcare priority in prisons and good management of diabetes should be encouraged for those with a diagnosis.

Key words

- Diabesity
- Diet
- Exercise
- Prisons

Authors

Keith Booles is Senior Nurse Lecturer, Staffordshire University, Shrewsbury, Shropshire

Diabesity is a major health problem within the prison setting, as well as society as a whole. The UK's prison population is a particularly vulnerable group with multiple problems that can complicate healthcare delivery. This article questions why healthcare is frequently substandard in prisons and argues that it is essential that people in prison are helped to avoid obesity as this can prevent the development of long-term health problems such as diabetes. Healthcare professionals should take the opportunity to bring health promotion to people who may not have had access to healthcare before they entered prison. The author offers suggestions of ways to improve care in prisons and argues that it is worth investing in obesity prevention in prisons by providing a healthy diet and facilitating access to regular exercise. The author also emphasises the importance of carrying out standardised dietary assessments for every person who is admitted to a UK prison.

Diabesity, the coexistence of obesity and type 2 diabetes, is presently one of the greatest health challenges within our society. This article will consider the detection, diagnosis and management of diabetes among the prison population and why attempts should be made to reduce the risks of developing health complications related to obesity and diabetes among this vulnerable patient group.

It was highlighted by Reed and Lyne as far back as 1997 that the provision of healthcare within a prison setting was suboptimal. Nearly two decades later, prisoners with any type of diabetes diagnosis, or those who are at risk of developing type 2 diabetes, will not necessarily receive the support they need to either prevent the disease or to manage it, despite it being flagged as a concern.

Diabetes prevalence in the prison population

There are currently about 160 prisons in the UK with an approximate annual population of 90 000. It is quite difficult to find accurate figures for the prevalence of diabetes in UK prisons but, for reasons that will be outlined in this article, it is likely to be common (Diabetes UK, 2005).

A recent report from HMP Wormwood Scrubs stated that the prevalence of diabetes among its prisoners was 4.0% (Joint Strategic Needs Assessment, 2013). Although this was higher than the 3.4% in the wider local community, it was not as high as the predicted prevalence of 8% based on national research (which was also the figure found at a male prison in a study by Marshall et al [2001]). The report suggests that the condition is not being picked up when prisoners are admitted to prison. This would not be that surprising as people who end up in prison may well have chaotic lifestyles and often will not have had appropriate access to healthcare, with many not ever having registered with a GP or dentist (National Audit Office, 2006). It is suspected that many diabetes cases will have gone undetected before a stay in prison.

Another US study (Binswager et al, 2009) compared self-reported conditions among the prison population with the general population and, after

adjustment for sociodemographic differences and alcohol consumption, the results showed that those in prison were more likely to have hypertension, asthma, arthritis, cervical cancer and hepatitis, but there were no increased odds for diabetes, angina or myocardial infarction and there were actually lower levels of obesity. There are limitations to this study, particularly as the conditions were self-reported.

Characteristics of the prison population and the risk of developing diabetes

It is certain that the prison population will have a higher level of health issues associated with social deprivation and it will be made up of people with complex health needs.

Age

The prison population is typically made up of younger men, although in 2013 it has been shown that prison demographics in England and Wales are changing in respect of age with more prisoners being over 60, and the numbers of those in their seventies and eighties also on the rise (Berman and Dar, 2013). This will also precipitate an increase in the problems of obesity and diabetes, and other complex health needs and problems will be encountered in greater frequency.

Socioeconomic status

The World Health Organization (1999) points out that most prisoners are from marginalised backgrounds in economically deprived social groups and will, therefore, be at greater risk of developing non-communicable diseases such as diabetes (Møller et al, 2007). Diabetes UK (2005) has reported that the most deprived people in the UK will be 2.5 times more likely to have diabetes and the United Nations draft declaration (2011) stated that people "in a vulnerable position", including prisoners, were more likely to be affected by non-communicable diseases.

Ethnicity

People within certain minority ethnic populations in the UK are up to six times more likely to develop diabetes than the general population (Diabetes UK, 2005). In June 2012, over one-quarter of the prison population in England and Wales whose ethnicity had been recorded were from a minority ethnic group (Berman and Dar, 2013). It would follow that this would have an impact on the number of prisoners with diabetes.

Complex health needs

The prison population has been acknowledged as being a vulnerable group with multiple care problems in the *National Services Framework for Diabetes* (Department of Health [DH], 2001; 2002). There will be problems associated with drug and alcohol misuse and problems related to poor diet. There will be a higher level of people with mental health problems with one in 10 inmates suffering a psychotic episode in the 12 months before they had been incarcerated (Diabetes UK, 2005). It has been documented that people with severe mental illness may be more vulnerable to developing diabetes and it has been reported that one in five people with severe mental illness have diabetes (Diabetes UK, 2005).

Obesity

In 2008, 36 million deaths worldwide were attributable to non-communicable diseases and 14 million were associated with an unhealthy diet, 3 million to insufficient exercise and 3 million to obesity (Herbert et al, 2012). Obesity has a strong association with the development of type 2 diabetes and 80% of people with type 2 diabetes are overweight or obese at diagnosis (Diabetes UK, 2006).

In a comparative review of 31 studies of prisoners in 884 institutions in 15 countries, it was found that the male prison population was less likely to be overweight or obese compared with a matched non-incarcerated group in the same country (Herbert et al, 2012). Only one study in the US showed that incarcerated men were more likely to be obese or overweight. The UK study involved 992 incarcerated males and was carried out in 1994 (Office of Population Censuses and Surveys Social Survey Division, 1998). In general, it was found that women prisoners were more likely to be overweight or obese although the UK study (Plugge et al, 2009) showed that women were less likely to be overweight or obese compared with a similarly aged group of non-incarcerated women.

Another study from the US, which compared obesity prevalence in a prison population with the

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Page points

1. There is evidence that people in prison face a poor diet and that exercise opportunities are limited.
2. Dietary assessments for people with diabetes within the prison setting are frequently not carried out at all or not carried out on arrival.
3. The prison population is a challenging group and the prison organisation imposes additional problems for healthcare professionals.

general population, showed that the prisoners were less likely to be obese (Houle, 2011).

The more recent HMP Wormwood Scrubs report suggests that, although in 1994 the prison population surveyed was on average a desirable weight or underweight, the general changes in lower socioeconomic groups and the growing obesity prevalence in society as a whole means that "obesity is an emerging issue in prisons".

Exercise and diet in prisons

There is some evidence to suggest that people in prison are being failed with the food that they are given and they are not given enough opportunity to exercise. Herbert et al (2012) used comparative data from 15 countries, and both UK studies that were included showed that both men and women in prison were less likely to achieve adequate physical activity (defined as more than 150 minutes per week). Edwards et al (2007) showed that a typical diet in a UK prison exceeded the recommended daily intake in fat by 39%. Sodium intake was also reported as two to three times the recommended value.

The Corston Report (2007), which reviewed prison conditions for women in the UK, had inmates criticising "a barren concrete exercise yard and the organisational regime which they felt forced them to choose between exercise and work".

Prisoners may be more vulnerable to the risk of obesity related to poor diet and limited opportunities to exercise. An issue such as obesity within the prison environment will create multiple challenges. This will include similar issues identified within the general population, but with the added difficulty of being among a closed and very controlled environment. Initiatives that prove successful in the wider population may be more difficult to implement "inside".

If the area of obesity was managed more effectively within this environment the short- and long-term health of this group of people would inevitably improve and future health problems such as heart disease, stroke, kidney disease and long-term complications of diabetes would be reduced along with the possible psychological and social implications of chronic ill health.

Recently published work by Nagi et al (2012) and Mills (2013) exploring diabetes management within the prison setting identified diet as a key component in diabetes care. This follows up what was identified by Booles (2011) in a Royal College of Nursing (RCN) audit that showed that the dietary assessment process was frequently either not carried out at all or was not carried out when the person arrived in the prison setting.

Improving health provision in prisons

There are several potential reasons why it is difficult to deliver high quality healthcare to people in prison (DH and HM Prison Service, 2002; RCN, 2009). The prison population is, in many ways, a challenging group and the prison organisation itself imposes additional problems for healthcare professionals. Deficiencies in healthcare provision are likely to be particularly noticeable with regard to chronic diseases such as diabetes (Condon et al, 2007; RCN 2009). The deficit has led to initiatives to bring healthcare provision in prisons up to the standard given by the rest of the NHS (Diabetes UK, 2005).

Having identified that the prison population is generally vulnerable to developing non-communicable diseases, including type 2 diabetes, it is important that improvements are made to health promotion that can help reduce the modifiable risk factors. It is extremely important that a healthy diet is provided and that there is ample opportunity for inmates to exercise. The following observations are based upon the author's original research (Booles and Clawson, 2009) and numerous undocumented conversations with staff who work in prisons in a variety of roles.

Tackling obesity in the prison setting: Identifying the problems

Unhealthy diet

In wider society there is a choice of what to eat, but, within a setting such as a prison, that choice is much more limited as it will be based on decisions made by the kitchen lead. There are obvious issues involved in feeding a large group of people, particularly regarding the amount of money that is available to cover the cost of the food. The prisoners inevitably have a limited choice at meal times and their choice may also be influenced by their peer group. At one prison in the UK, for example, artificial sweeteners have to be purchased by prisoners and, if they cannot afford this luxury, they only have access to sugar. It has also been noted that

prisoners in high-income countries can purchase extra snacks that are usually "energy-dense and salt rich" (Herbert et al, 2012).

Lack of exercise

The lack of available facilities mean that prisoners might gain weight due to poor diet coupled with limited chance to exercise. This limitation may be due to security issues, time-limited exercise or even prisoners not wanting to use the facilities because they cannot choose when they exercise. In the outside world people can exercise when they like and do what they choose to do, such as walk, run or swim, but in prison that choice is very limited in scope, especially in high-security establishments.

Inadequate knowledge about obesity and dietary management from prison staff

If the people who support prisoners with or without a diabetes diagnosis do not themselves understand the importance of a healthy diet they will be unable to offer support and advice to their charges.

Poor knowledge about weight care and diabetes

The knowledge and understanding of prisoners in terms of their diet and weight could be clearly affected by intellectual ability. People in prison are often from the lower social and economic groups with a limited amount of schooling, often affected by periods of truancy and school exclusions. The prison population often have underlying learning difficulties and limited literacy and numeracy abilities, resulting in the inability to choose the right food to eat and poor understanding of how to manage their diabetes whichever treatment protocol is used. They have probably not been offered education courses such as DAFNE, DESMOND or EXPERT to gain greater understanding about diabetes control. All of these barriers will clearly affect their weight management. The use of food to gain credit in prison may also have an effect on a prisoner's diet. It is known that in prisons the use of food as a bartering tool may result in a greater consumption of less healthy food.

Poor management of diabetes

There may well be a lack of knowledge and understanding about the management of diabetes among prisoners with the disease.

Improving dietary management in prisons

The following care recommendations could be implemented in all prisons within the UK with minimal cost implications to the prison or prisoner, and they would clearly reduce levels of obesity within this setting as well as having the potential to reduce the degree of diabetic complications in those prisoners with a diabetes diagnosis. It could also have the positive social consequence of improving the life and opportunities for the prisoner on their subsequent release. There are six main areas where improvements could be made.

Healthier diet

The diets of people with diabetes are currently managed within the prison, but it is governed by the funding given within that institution. Increasing the funding and allowing the prison catering service to deliver improved and healthier diets would be a big improvement. Another option, however, would be to educate the catering team on what is a healthy diet and how to make that diet appealing to this specific client population (Hinata et al, 2007).

Improved dietary assessment on arrival in prison

This has been identified by Booles (2011) and Nagi et al (2012) as an area that needs attention. An early comprehensive dietary assessment is essential when people enter the prison environment, especially if they have a diabetes diagnosis or they are obese. There clearly needs to be an assessment tool which follows a logical process to gain information so that an early healthier diet intervention can be organised for the benefit of each individual in the prison setting. This would be reinforced alongside an emphasis on the importance of exercise, the availability of healthy food and improved training for all prison staff. NICE (2012) has developed a tool for black, Asian and other ethnic minority groups, which make up a significant proportion of the prison population (Berman and Dar 2013). Perhaps this tool can be adapted and applied to the broader population?

Education

The prison population needs to be educated in the benefits of having a good diet and in the ensuing health benefits both now and in the future in order

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Page points

1. Prisons need to provide the prison population with better dietary choice alongside improved opportunities for exercise in order to improve health and reduce obesity and its effects.
2. Prison staff should be educated about healthy diets and be given the opportunity to reach those who have difficulty in engaging with health services.
3. People in prison should all be screened for diabetes as a first step towards managing the disease.

to prevent obesity, reduce the risk of developing type 2 diabetes and generally improving well-being. This will clearly be a difficult challenge.

Use of dietitians in prisons

A role for dietitians would be the gold standard acquisition in this setting and should be considered, as it would clearly have a positive impact on all the other areas that have been identified here as potential improvements. Access to dietitian support would enable the prison population – including staff and the catering team – to work together to ensure that each client follows a healthy eating protocol within this setting. This could be implemented by dietitians seeing individual prisoners to give specific advice or teaching sessions for prisoners, staff and the catering team about healthy food and long-term health benefits. This will have a short-term cost but a large financial gain in the long term by reducing costs associated with ill health.

Greater knowledge of dietary care among staff in prisons

The prison staff requires education about healthy diets so that they can positively enforce this with the prison population. This again will be difficult but could also have the result of improving the well-being of staff and improving their own long-term health (Petit et al, 2001).

Regular exercise

This is clearly a method to reduce weight and will, therefore, have a major impact on people with diabetes or who are overweight or obese, and it will result in improved health in this client group. It will require greater access to exercise facilities and more staff to supervise these clients in this environment.

Conclusion

It is important to consider the dietary management and habits of the prison population. It is also important to give guidance in terms of better dietary choice and management alongside increased exercise for all prisoners. The aim should be to improve health and reduce obesity and its effects, including the onset of type 2 diabetes. This will clearly improve the individual health of all prisoners whether they have existing diabesity issues or not.

The issue of obesity needs to be identified early, assessed completely and then managed effectively within a prison environment. Prisons must start to look at the dietary management and habits of those who are within prisons for a set time and strive to give guidance in terms of better dietary choice and management in association with exercise for all prisoners, as well as for all staff who work with this vulnerable group. Prison staff have the opportunity to reach people who have difficulty in engaging with health services in their regular lives and this opportunity should not be wasted.

The prison population would benefit from focused healthcare and education in relation to obesity and diabetes. People in prison should all be screened for diabetes, as a diagnosis is the first step towards managing the disease.

This subject requires much more in-depth research as it is clear that there needs to be radical changes in care in respect to diabesity within this setting. If this problem can be addressed effectively, then the positive health effects, both while in prison and in the long-term, will have an enormous impact on the lives of many in our society. ■

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