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Physical Health and Dual Diagnosis

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Abstract

The physical health of people with mental illness may be neglected for a variety of reasons. This paper looks at the common physical health problems experienced by people with a dual diagnosis of substance misuse and serious mental illness, and suggests ways of assessing and managing them.

Keywords

Cancer; Cardiovascular disease; Diabetes; Dual diagnosis; Respiratory disease; Smoking cessation

Introduction

People who have a dual diagnosis of schizophrenia or bipolar disorder and co-morbid substance use face a challenge in maintaining their physical health as the effects of substance use compound the physical health issues associated with severe mental illness (SMI). There is a need for professionals working with people with a dual diagnosis to consider balancing a whole range of physical problems in their assessment and treatment plans, in addition to those directly related to substance misuse.

Recent health policy in the UK includes recommendations for the physical healthcare of people with SMI (Department of Health (DH), 2005, 2006). Guidelines from the National Institute for Health and Clinical Excellence (NICE) for the treatment of schizophrenia and for the management of bi-polar disorder in primary and secondary care recommend that routine physical health checks be carried out in primary care (NICE 2002a, 2006a). Since 2004, general practitioners (GPs) in the UK have been given financial incentives to meet a range of clinical and organisational targets, known as the quality and outcomes framework (QOF) (British Medical Association, 2008). Mental health targets include offering health promotion and annual physical health checks to people with schizophrenia and bi-polar disorder. The type of health check is left to the discretion of the GP practice, but it is recommended that blood pressure (BP), weight (including body mass index (BMI) and waist circumference), lipid levels, plasma glucose and liver function are checked. Incentivising

primary care services to meet targets rather than rewarding them for improving outcomes has been a frequent criticism of the QOF (Howie *et al*, 2008). Moreover, if a service user chooses not to visit the GP, is not registered with a GP or is admitted to an inpatient unit, then responsibility for physical health monitoring should be taken up by secondary services (NICE, 2002a). Despite this guidance, service users' physical health care needs are still not being met comprehensively either by primary care (Filik *et al*, 2006) or mental health services (Barnes *et al*, 2007).

The re-emphasis towards holistic healthcare delivery is central to the government's drive to reduce health inequalities, support people to make informed healthy choices, and improve partnership across services (DH, 2005). This article provides an overview of the common physical health problems experienced by people with a dual diagnosis of SMI and substance use and offers some suggestions for their assessment and management.

Common physical health problems

Recent research suggests that life expectancy of people with schizophrenia may be reduced by 25 years (Parks *et al*, 2006). Suicide and accidents account for approximately 40% of premature deaths in people with schizophrenia, whereas 60% result from physical health problems (Brown, 1997).

There are many reasons why people with a dual diagnosis have higher rates of morbidity and mortality than the general population (Table 1). The most frequently cited reasons for premature death in schizophrenia are often referred to as 'lifestyle choices' (for example, substance use, tobacco use, lack of exercise, poor diet and unsafe sexual practices). However, some service users would argue that these are not choices at all, but are the consequences of both having an SMI and the treatments prescribed for them (Robson & Gray, 2007).

The use of alcohol and illicit substances increases the risk of developing medical complications. Long-term alcohol abuse results in cardiovascular and liver disease, as well as immune and gastrointestinal disorders (Britton *et al*, 2004). Infectious diseases including hepatitis B and C, human immunodeficiency virus (HIV) and sexually transmitted diseases can occur through the sharing of drug-injecting equipment and engaging in unsafe sex (Ziedonis *et al*, 2005).

Cardiovascular disease

Cardiovascular disease (CVD), such as coronary heart disease, angina, and hypertension, is the most frequent cause of premature death in people with major depressive disorder, bi-polar disorder and schizophrenia (McIntyre *et al*, 2007). Risk factors for CVD include both non-modifiable and modifiable risk factors (Table 2). CVD is caused by the same lifestyle choices that are seen more often in people with SMI than in the general population (Brown *et al*, 2000). Substance use by those with SMI also heightens the risk of developing CVD. Stimulants such as cocaine increase the heart rate and BP, which in turn increases the oxygen demand on the heart (Vasica & Tennant, 2002). Alcohol also causes a dose-dependent increase in BP and cholesterol (Ziedonis *et al*, 2005). The potential protective qualities of alcohol described in recent years (Britton *et al*, 2004) have not been reported in those with SMI.

There are various ways of identifying individuals who are at increased risk of developing CVD (Table 2). To assess the risk of hypertension, BP should be monitored routinely with all service users. Optimum blood pressure is 120/80mmHg (NICE, 2006b). Antihypertensive treatment is recommended for patients who have a persistent systolic BP 160mmHg or

persistent diastolic BP 100mmHg or both. If service users have other cardiovascular risk factors such as diabetes, treatment should be offered if they have systolic BP 140mmHg or diastolic BP 90mmHg or both (NICE, 2006b).

To assess the risk of obesity, a person's BMI should be calculated to determine the ratio between a person's weight (kg) and height (m²). A healthy BMI ranges between 18.5 and 24 (World Health Organization, 2000). People with SMI tend to have higher rates of upper body obesity (visceral fat), which is a stronger risk factor for developing metabolic complications than overall body fat (Ryan and Thakore, 2001). Therefore, waist circumference should be measured at the level of the umbilicus. A circumference of more than 40 inches in men and 35 inches in women is thought to be a more accurate indication of elevated health risks (Lean *et al*, 1995).

Diabetes

The two main types of diabetes are type I and type II and result in altered blood glucose levels if untreated. Prolonged exposure to raised blood glucose levels can then cause visual impairment and blindness, in addition to nerve and kidney damage (DH, 2001). Type I has a rapid onset, usually of days to weeks, and involves a problem in the production of insulin. In type II, the quantity of insulin produced or its utilisation by the body is inadequate. It has a much slower onset, which means it can go undiagnosed for nine to 12 years.

Diabetes is much more prevalent in schizophrenia than the general population. Approximately 15% of people with schizophrenia have diabetes (Holt & Peveler, 2006), compared to approximately five per cent in the general population. Diabetes has been associated with schizophrenia, independently of medication, since the 1800s (Koren, 2004), although it can be influenced by the metabolic effects of some antipsychotic medication such as olanzapine and clozapine (Newcomer *et al*, 2002). Diabetes is also influenced by family history, physical inactivity, poor diet, and smoking (Gough & Peveler, 2004). Alcohol consumption of more than three units a day is thought to increase the incidence of diabetes, whereas less than three units is associated with a lower incidence of diabetes (Howard *et al*, 2004). Again, the potential protective qualities of alcohol against diabetes have not been reported in people with SMI.

There is no clear consensus on testing for diabetes in service users with SMI. Initial testing should be carried out when service users first come in to contact with mental health services regardless of risk factors and presentation. A measurement of a fasting plasma glucose (FPG) level is considered the optimum test, but when impractical, random plasma glucose (RPG) levels can be measured instead. Results need to be followed up with an oral glucose tolerance test if FPG level is at least 6.9mmol/L (126mg/dL) or if RPG is between 7mmol/L (126mg/dL) and 11mmol/L (200mg/dL) (Barnett *et al*, 2007). FPG levels should be checked at least every six months or more frequently if the service user is gaining weight (Barnett *et al*, 2007).

Respiratory disease and cancer

People with SMI are more likely than the general population to suffer from asthma, chronic bronchitis and emphysema (Sokal *et al*, 2004). In an observational study in the UK of 602 patients with schizophrenia and related psychosis, 90% had poor lung function compared to 42% of the general population (Filik *et al*, 2006). There are also consistent reports of higher rates of digestive and breast cancer in people with schizophrenia (Hippisley-Cox *et al*, 2006). However, rates of lung cancer in people with schizophrenia are contradictory. Whereas one study found a 46% decreased risk of lung cancer (Hippisley-Cox *et al*, 2006),

Brown *et al* (2000) and Lichtermann *et al* (2001) both found mortality rates for lung cancer twice as high in people with schizophrenia than in the general population.

Tobacco use is the single largest causative factor for lung cancer, followed by poor diet and physical inactivity. Health professionals often overlook tobacco as a comorbid substance use, yet it probably has the most adverse consequence on health and quality of life compared to other substances. People with schizophrenia and bi-polar disorder smoke up to three times more than the general population (Hughes *et al*, 1986). The reasons for this are multidimensional but include self-medication to reduce some psychiatric symptoms (Dalack *et al*, 1998) and to improve attention and selective processing of information, which are normally impaired in people with schizophrenia (Adler *et al*, 1998).

Excessive alcohol intake, as opposed to the type of alcohol (for example, beer, wine or spirits) increases the risk of cancers of the mouth, throat, oesophagus, colon and breast cancer (Boyle *et al*, 2003). To date, cannabis has not been consistently causally linked to these types of cancers (Melamade, 2005). Unlike with cigarette smoking, the effect of cannabis on the lungs has been poorly understood until recently. Studies suggest that it is associated with obstructive lung disease (Tetrault *et al*, 2007). A case series by Hii *et al* (2008) found the average age for developing lung disease in cannabis-smoking patients to be 41 compared to 65 for tobacco-smoking patients. This may be due to cannabis smokers inhaling more and holding their breath four times longer than cigarette smokers, which increases the concentration and lung deposits from the smoke and leads to greater and more rapid lung destruction (Hii *et al*, 2008). Many people with SMI smoke tobacco and cannabis together, which may well increase the risk of developing respiratory symptoms even further.

Screening programmes may be effective in detecting cancer early but the uptake of these programmes by service users with SMI is lower than in the general population (Lindamer *et al*, 2003). The NHS Breast Screening Programme in the UK provides free breast screening every three years for all women aged 50 to 70. Women between the ages of 25 and 64 are eligible for a free cervical screening test every three to five years. Currently there is no national screening programme for prostate cancer, but male service users would benefit from education about symptoms of prostate disease. The most recent screening programme to be introduced in the UK is for bowel cancer. This programme offers screening every two years to all men and women aged 60 to 69. Mental health workers should provide education regarding the importance of routine screening and address any issues regarding ambivalence or reluctance to attend the appointments.

Lifestyle Interventions

Lifestyle interventions should begin when the service user first comes into contact with mental health services and be integrated into routine care (Robson & Gray, 2006). Professionals, service users and carers can share the responsibility of preventing and addressing the modifiable risk factors of poor physical health. Most mental health workers have access to specialist practitioners such as dietitians, physiotherapists and smoking cessation specialists, and could actively collaborate to design specialised health promotion programmes for people with dual diagnosis. Health behaviours can only be modified if the service user is personally motivated to change, so interventions should be tailored to individuals' stage of readiness. There are also many simple interventions that mental health workers can incorporate into routine practice.

Exercise and healthy diet

A number of studies have demonstrated the positive benefits of exercise on mental health (Faulkner & Sparkes, 1999). For general health benefits, adults need to be achieving at least

30 minutes of moderately intense activity at least five times a week (DH, 2004). Exercise can be incorporated into daily routine without much effort or disruption – for example, by exercising for three 10-minute intervals throughout the day. Mental health workers should help people with dual diagnosis find creative ways of doing this and perhaps explore their beliefs about exercise and help resolve any barriers that get in the way of increasing activity levels. Educational information about exercise and nutrition should be shared in a way that is understandable and meaningful to people with dual diagnosis. Food choices for people with dual diagnosis are not only influenced by individual preferences but also the cost and affordability of food; access to kitchen and storage equipment; and skills and confidence in budgeting, shopping and cooking. Mental health workers could collaborate with other professionals and service users to address all these issues.

Smoking cessation

As a public health strategy to encourage people to stop smoking and protect non-smokers, a ban on smoking in public places has been introduced across Europe. The implementation of this ban in mental health facilities has been contentious (Campion *et al*, 2006) but could well provide a catalyst for change and social inclusion for the majority of people with dual diagnosis who smoke. There is a growing evidence base that people with SMI are able to stop smoking if they participate in programmes specifically tailored for them (Addington *et al*, 1998; George *et al*, 2002; Baker *et al*, 2006). All service users should be asked about their smoking status and level of dependence. Successful interventions combine atypical antipsychotic medication with either nicotine replacement therapy (NRT) or bupropion, in addition to psychological interventions. NRT is the most widely used treatment to aid smoking cessation and doubles the chance of a successful quit attempt (NICE, 2002b). Service users who are prescribed certain psychotropic medicines need to be made aware of the potential clinical effects that smoking and smoking cessation have on the metabolism of their prescribed medication (Robson & Gray, 2005). Serious adverse events can be avoided by collaborative medication management.

Conclusion

The causes of poor physical health in people with a dual diagnosis are complex and interactive. Mental health practitioners have an opportunity to improve the physical and mental health of people with dual diagnosis through risk assessment and collaborative health promotion interventions initiated at the onset of people's illness. Poor physical health does not have to be an inevitable consequence of having a dual diagnosis.

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Table 1

Reasons for poor physical health in people with a dual diagnosis

Health behaviours	Smoking Diet Physical activity Alcohol and substance misuse Sexual behaviour
Illness	Positive symptoms Negative symptoms Cognitive and mood symptoms Poor spontaneous reporting of physical health problems
Health service	Lack of knowledge of mental health workforce Lack of training attitudes and confidence of mental health staff Attitudes of primary care staff Lack of integrated care
Adverse effects of medication	Extrapyramidal side effects Weight gain Glucose intolerance and diabetes Cardiovascular effects Sexual dysfunction Neuroleptic malignant syndrome
Environment	Poverty Poor housing Social Exclusion

Robson & Bragg, 2008

Table 2

Risk factors for developing cardiovascular disease

Non-modifiable	Modifiable		Measurement
Older age	Tobacco smoke	Diabetes	BP Weight (BMI and waist circumference)
Gender (male)	Obesity	Dyslipidaemia	Lipids (triglycerides and cholesterol)
Family history	Physical inactivity	Hypertension	Plasma glucose

Adapted from American Heart Association, 2007