ASH Scotland
Smoking, alcohol and opioid dependence
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Key points:

- cigarettes are engineered to create and sustain dependence[1]
- nicotine is addictive, to a degree similar or in some respects exceeding addiction to drugs such as heroin or cocaine[2]
- that smokers continue to use tobacco in the face of serious health consequences attests to the addictiveness of nicotine
- rates of smoking amongst people who misuse drugs and alcohol are higher than in the general population
- it is wrong to assume that individuals with substance misuse problems do not want to quit smoking
- smoking cessation can be integrated into alcohol and drug misuse treatment without jeopardising recovery goals
- smoking cessation efforts may actually support long-term sobriety.

This information briefing is for anyone involved in improving the health of people misusing alcohol and/or drugs who also smoke tobacco.

Introduction

In Scotland, 23% of all male deaths, 25% of all female deaths, 90% of lung cancer deaths in men aged over 35 years and 89% of lung cancer deaths in women aged over 35 can be attributed to tobacco use[3]. Twenty-two years of life are lost on average among men and women in middle age (35-69) from smoking[4]. As smoking causes such widespread harm to health, smoking cessation interventions (whether brief interventions, intensive individual or group support, or pharmacotherapies) are among the most cost-effective interventions available in preserving life[5], even if an individual has smoked for many years.

Cigarette smoking amongst substance misusers is an important health risk within a population subgroup whose general health may already be compromised[6]. People who misuse substances tend to start smoking at a younger age and are also more likely to be heavy smokers, nicotine dependent, and experience greater difficulty with quitting[7]. Individuals with current or past substance misuse problems are also likelier to have psychiatric, cognitive or medical problems which require more specialised cessation interventions[8].

Despite the serious risks which tobacco use poses, the benefits of smoking cessation have not always been a focus when engaging with substance misusers. Barriers which may contribute to this lack of focus include staff attitudes about and use of tobacco, lack of adequate staff training to address tobacco use, and limited tobacco dependence treatment resources[9]. However, a 2004 meta-analysis revealed initial success with smoking cessation at post-treatment, along with evidence that smoking cessation efforts may actually support long-term drug and alcohol sobriety[10]. In addition, clinical studies suggest that smoking cessation can be integrated substance misuse treatment without jeopardising recovery goals[11] [12] [13].

Relative to other substances, tobacco is by far the most harmful and deadly. For example, in the United States more deaths are caused each year by tobacco use than by all deaths from human immunodeficiency virus (HIV), illegal drug use, alcohol use, motor vehicle injuries, suicides, and murders combined[14]. An 11-year retrospective study which followed up on individuals who received addiction treatment found that more than half of all deaths were tobacco-related[15]. In a 24-year prospective study of heroin misusers entering treatment, the death rate of smokers was found to be four times that of non-smokers, making smoking status a significant predictor for death in this population[16]. Until drug and alcohol services engage with tobacco dependence in their client groups (whether in residential or community settings), many will pass through the treatment system and overcome their 'primary' drug of misuse only to die prematurely from tobacco-related illnesses.

Addictiveness of nicotine

'*a critical part of cigarette design is first ensuring that enough nicotine is available in the unsmoked rod, and then making sure that the design enables the smoker to get enough of the nicotine out to maintain his or her addiction*.'[17]

Tobacco products may be legal to use and easy to obtain but it would be a mistake to regard them as pharmacologically benign as they also meet the standard criteria for dependence-producing drugs[18]. In a landmark US legal ruling in 2006, the tobacco industry were found to have known for decades that they were 'in the drug business, and that cigarettes are drug delivery devices'[19]. The tobacco industry has deployed a vast array of technologies ranging from chemistry to particle physics to develop methods which manipulate nicotine delivery and absorption (eg adding levulinic acid, using filter tip ventilation, and regulating particle size). The modern cigarette is a precision-engineered product designed with a deliberately enhanced addiction risk[20].

According to the Royal College of Physicians report "Nicotine Addiction in Britain", 'nicotine produces tolerance and dependence such that abstinence after appropriate dosing may result in withdrawal symptoms'. It appears that tobacco affects the same neural pathway, the mesolimbic dopamine system, as alcohol, opioids, cocaine, and marijuana[21].

Yet tobacco products are not drugs of 'misuse', for smokers use them just as the manufacturers intended. This legitimate 'use' kills nearly six million people globally each year, of whom more than 5 million are users and ex-users and more than 600,000 are non-smokers exposed to second-hand smoke[22]. Is then tobacco-related death and disease a by-product of addiction?

Tobacco and alcohol

Alcohol is responsible for one in twenty deaths in Scotland and mortality rates have doubled since the early 1990s[23]. A large-scale survey in the United States suggests that people who are dependent on alcohol are three times more likely than those in the general population to be smokers, and people who are dependent on tobacco are four times more likely than the general population to be dependent on alcohol[24]. Treatment of tobacco dependence in alcoholic smokers does not seem to cause excessive relapse to drinking and, in fact, stopping smoking may enhance abstinence from drinking[25].

*A*lcohol and tobacco, alone or in combination, are associated with an increased risk of various cancers, including those of the upper aero-digestive tract and liver[26]. Combined alcohol and tobacco use can increase the risk of cancer of the oral cavity and throat (pharynx); the combined effect is such that heavy drinkers and smokers have 38 times the risk of abstainers from both products[27]. Similarly, 80 per cent of oesophageal squamous cell carcinomas in Europe and the Americas appear to be attributable to the synergistic effects of alcohol and tobacco[28]. There is clear evidence that for either alcohol or tobacco use, the risk of oesophageal cancer decreases rapidly, strongly and significantly with longer periods of abstention, although the risk benefit of merely quitting alcohol drinking was delayed (>10 years of cessation) unless it was also accompanied by several years of smoking cessation[29].

Opiate dependence and tobacco use

There are almost 60,000 problem drug users in Scotland[30]. Anecdotally, most heroin users are believed to be smokers and in a 2011 study from Italy, smoking prevalence was reported to be 99.2%[31].

Methadone maintenance and tobacco use

Smoking prevalence among outpatient methadone users in the UK is reported to be 93%[32]. Methadone has been shown to increase cigarette smoking in a dose-dependent manner, whereas smoking/nicotine has been shown to increase methadone self-administration and reinforcing properties[33].

Positive benefits of smoking reduction using NRT were found amongst a group of individuals with respiratory illness in a US methadone maintenance programme. An association between subjective short-term health changes and reduction in smoking was demonstrated[34].

A recent journal article[35] reported that decreased intake of cigarette smoke can lead to a reduction in methadone metabolism, resulting in higher serum concentrations. This suggests that methadone users should be monitored for signs of methadone toxicity upon the start of smoking cessation, and the dose of methadone adjusted accordingly.

Conclusion

Substance misusers have a higher burden of both mental and physical disease than the general population[36]. Up to three in four people using drugs have mental health problems, and up to one in two people with alcohol problems may have a mental health problem[37], yet their physical health needs are less likely to be met. Surveys suggest that many people in drug or alcohol treatment programmes are interested in giving up smoking[38]. A meta-analysis of 18 studies suggests that addressing tobacco use in clients can improve their alcohol and other drug outcomes by an average of 25 per cent[39], although it also noted that effects for smoking cessation were non-significant at long-term follow-up. Nevertheless, as previously noted, there is evidence to suggest that smoking cessation can be integrated into alcohol and drug misuse treatment without jeopardising recovery goals.

Approaches to reducing tobacco harm amongst those who misuse alcohol and drugs might include improved collaboration between health and addictions services, developing policy changes to promote addressing tobacco use, and providing increased financial support for specialised tobacco dependence treatment. Professionals working in substance misuse already have the knowledge and skills to support clients in dealing with their use of addictive substances and these skills should be directly applicable to treatment of tobacco. There may be a need for those working in substance misuse to have a better understanding of tobacco's harms and the substantial health benefits which smoking cessation confers. There is certainly a need for those who misuse alcohol and drugs to have improved access to smoking cessation support.

Further support

- Scottish Drugs Forum www.sdf.org.uk
- To find your nearest service see the Scottish Drugs Services Directory: www.scottishdrugservices.com/sdd/homepage.htm
- Alcohol Focus Scotland, 166 Buchanan Street, Glasgow G1 2LW. 0141 572 6700. www.alcohol-focus-scotland.org.uk
- Support to give up smoking - phone free to Smokeline on 0800 84 84 84 (9am to 9pm, seven days a week). Smokeline advisers provide free advice and information for anyone who wants to stop smoking, or who wants to help someone else to quit. Smokeline also provides information about the free stop smoking services provided by every health board in Scotland. Or visit www.canstopsmoking.com and enter a postcode to find the nearest stop smoking service.

Further information

Evidence-based guidelines for the pharmacological management of substance misuse, addiction and comorbidity: recommendations from the British Association for Psychopharmacology.
Journal of Psychopharmacology 18(3) (2004) 293–335.
www.bap.org.uk/pdfs/BAP_Guidelines.pdf

Tobacco Treatment for Persons with Substance Use Disorders - A Toolkit for Substance Abuse Treatment Providers. This easy-to-read, evidence- based toolkit was developed was developed in Colorado, USA, by Tobacco Use Recovery Now! (TURN), a project of Signal Behavioral Health Network. It is free to download from:
http://smokingcessationleadership.ucsf.edu/Downloads/Steppsudtoolkit.pdf

The **Bringing Everyone Along** project (from the USA) has developed resources to assist health professionals to adapt their treatment services to the unique needs of tobacco users with mental health and substance use disorders. www.tcln.org/bea/

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