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HIV among people using anabolic steroids in the United Kingdom: an overview

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Introduction

Since the mid-1980s, preventing HIV transmission among people who inject drugs (PWIDs) has been one of the cornerstones of the UK's response to HIV. The early comprehensive implementation of harm reduction, particularly needle and syringe programmes, has been widely acknowledged as key to a low prevalence of HIV among PWIDs in the UK. However, this harm-reduction strategy was developed to avert an HIV epidemic among people injecting heroin [1] and while the prevalence in this population remains low [2,3], it is clear that there are now emerging populations of PWIDs with different patterns of drug use and risks [4,5]. This article discusses one of these: anabolic steroid use in the context of HIV, and highlights the potential for the nursing profession to reduce HIV-transmission risk, and to improve the health of this diverse and vulnerable population through the use of existing knowledge and expertise.

Anabolic steroids

Anabolic steroids (AS) are one of a range of enhancement substances known as image and performance enhancing drugs (IPEDs) that also includes peptide hormones, growth hormones and other drugs used to modify appearance. Globally, lifetime prevalence of AS has been estimated at 3.3% [6] and evidence indicates an increase in use over the past 20 years, with a greater number of people injecting AS presenting at needle and syringe programmes in Australia [7] and the UK [8,9]. In the UK, recent evidence from a national survey of people using IPEDs suggests a heterogeneous population with a range of drug-use behaviours, risks and vulnerabilities [10] and the use of these substances present a number of challenges in relation to healthcare. This article discusses AS in the context of HIV, and highlights the potential for the nursing profession to reduce the risk of HIV transmission and improve the health of this population of people using drugs.

The majority of people using AS inject their drugs [10,11] and are, therefore, at risk of harms associated with injecting such as injection site injuries, bacterial infections and blood-borne viruses (BBV) [12]. AS are only injected subcutaneously and intramuscularly whereas psychoactive drugs like heroin are most commonly injected intravenously and this results in different patterns of injection-related risks. Additionally, people using these drugs face a range of risks specifically associated with AS use. There is a growing evidence base in relation to the acute and chronic physical and psychological adverse consequences associated with AS use [13], and adverse effects [12], which many seek to self-manage through additional substance use. Complex polypharmacy within IPED use [14], characterised by dosages beyond any therapeutic range and an illicit market in which the contents and purity can never be guaranteed, has long been established [15].

It is recognised that the population using AS is diverse with a range of different needs and vulnerabilities. A recent attempt to demonstrate this suggests that people using AS may be categorised under four 'typologies' [16]. For example, the 'YOLO' (You Only Live Once) type was characterised by experimentation and risk-taking, including use of recreational drugs and alcohol, and by little concern for health harms. Use of illicit substances, particularly cocaine [5,14], and high levels of alcohol consumption among a subset of this population [10] increases the risks associated with both AS and psychoactive substances, and may be associated with risky sexual behaviours. Alternatively, it was hypothesised that the 'Athlete' type was characterised by combining different AS and thus risking their health to maximise the chances of competitive success [16]. Within different groups of people using AS, therefore, differences in health risks are likely to exist and further research is required to increase an understanding of how health services can identify and respond to these risks.

HIV among those using AS

There is scarce research focusing on AS in comparison to the body of evidence examining the prevalence and prevention of BBV among injectors of psychoactive drugs [17,18]. Historically, case reports of HIV among people using AS have been very rare [19–21] and the bio-behavioural surveillance of PWID had not detected HIV among this population [22]. However, more recent evidence points to HIV among those using AS emerging as a public health concern. Published in 2013, the largest study yet of BBV among those using anabolic steroids and associated drugs, found that out of the 395 men recruited, 1.5% had

Table 1: Blood-borne virus (BBV) prevalence and risk behaviours among people injecting IPEDs, England and Wales: 2012–2015

BBV or risk behaviour	Proportion of total surveyed*
HIV (*n*=603)	1.2%
Current or past hepatitis B (*n*=603)	2.7%
Current or past hepatitis C (*n*=603)	4.5%
Ever shared a needle, syringe or vial (*n*=586)	13%
Always used condoms past year, among those with two or more sexual partners (*n*=239)	15%

*Combined data from the 2012–2013 and 2014–2015 surveys. Source: Public Health England [28].

been infected with HIV, 9% had antibodies to hepatitis B core antigen (anti-HBc) and 5% to hepatitis C (anti-HCV) [5]. Analysis of data from this study, a subsequent targeted survey and the limited historical data available, demonstrated that BBV infections have become established among this population, and for HIV the prevalence is now similar to that of those injecting psychoactive drugs such as heroin [4].

Route(s), of HIV infection among this population, however, remain unclear. Although perhaps unlikely, amongst recent studies examining HIV prevalence, the use of AS may be related to the past use of these drugs as part of a medication regimen in relation to HIV treatment. Research into the behaviours of people who use AS highlights the possibility of transmission via the sharing and reuse of injection equipment, and through sexual activity (Table 1). While less commonly reported than in those who inject psychoactive drugs, the sharing of injecting equipment among people using AS has been noted in several UK studies [7,23,24], and surveys have also found this population to be highly sexually active with low rates of condom use [5,25]. It has been suggested that the risk of BBV infection through injection may be reduced when compared to that associated with the injection of psychoactive drugs [11,26], possibly due to differences in injection practices, for example, less frequent injection [27] or 'off cycle' periods [12].

The sexual behaviours of those who use AS appear likely to increase the risk of HIV transmission, with many reporting high numbers of sexual partners as well as low rates of condom use [5,22,23,25]. Additionally, of those using AS, HIV is significantly more common among men who have sex with men (MSM) [4,29] reflecting the higher prevalence more generally in this group. High levels of sexual activity in groups using AS may come as little surprise; for example, in addition to muscular enhancement, sporting or occupational reasons, a reported motivation for AS use is to increase attractiveness in an often young male population [30]. Furthermore, use of AS is associated with sports participation or activities to increase a healthy appearance [30]. Further research into the transmission of BBV among those who use AS is required, but it is clear that healthcare must address this risk by not just improving injection practices but also addressing sexual activities so as to reduce the risk of BBV among AS users, as well as in the wider population. Other potential harms associated with risky sexual activity particularly among young people and MSM, such as the spread of sexually transmitted infections and unwanted pregnancies, must also be considered.

The role of healthcare services in responding to the risk of HIV and health harms

There is increasing recognition of the vulnerabilities and needs of people who use AS reflected in calls for the provision of specialist services to cater for the specific needs of this group [3]. However, it remains important to ensure that people who use AS presenting at generic healthcare services receive suitable healthcare. Risks associated with HIV and other health harms may be confounded by reluctance in this population to engage with healthcare providers. In the UK, research indicates that the uptake of testing for BBV among people using AS is low with under a half ever being tested [5,10], suggesting that many infections may go undiagnosed. Increasing awareness among health professionals about AS-related risks and harms, including HIV and other infections, and their adverse effects will provide opportunities to improve the health of a population who may not be aware of the risks and the appropriate healthcare services.

Seeking healthcare in response to adverse effects associated with substance use in this population has been reported to be infrequent [10,27], although, these effects may have been minor harms and treatment may be more likely sought for more serious harms [31]. Further research is required to better understand facilitators and barriers to the use of appropriate healthcare services by this population. Perceptions of masculinity have long been linked with fewer help-seeking behaviours and lower use of healthcare services [32,33] particularly among younger men [34]. The uptake of healthcare services may be seen as a sign of weakness in males who participate in health-promoting behaviours such as physical activity and a healthy diet [35]. For individuals using substances to enhance muscularity and who are frequently embedded within gym and sporting culture, these issues of masculine identity and male roles are likely to be particularly relevant [36].

Furthermore, people using AS may perceive that health professionals lack the knowledge and skills to address the needs related to their substance use [37] and this may reduce engagement with healthcare services, including both drug services and primary care. Individuals who use AS may have strong beliefs about the differences between their own substance use and that of those who use and inject psychoactive drugs [38]. Where there are concerns about how the use of AS will be perceived and understood, people using AS may be disinclined to either access healthcare services or disclose their substance use when they do. Nurses and other health professionals encountering people using AS in primary or secondary healthcare settings have the opportunity to offer advice and information on safer injecting and sexual health, and to encourage the uptake of testing services. Nurses and healthcare professionals can draw on their expertise and skills; delivery of these interventions requires no in-depth knowledge of AS or the wider AS culture. However, increasing awareness and an understanding of the characteristics and risks of people who use AS will support healthcare professionals to identify AS use, and to identify opportunities to deliver interventions. HIV testing should be offered not only to people using AS presenting at healthcare services for blood tests or physiological or psychological treatment, but also if AS use is suspected during routine healthcare appointments. In the case of a population that is reluctant to engage in healthcare services, it is essential that nurses and other healthcare professionals capitalise on engagement opportunities while avoiding stigma and the potential for further barriers to engagement.

Conclusion

It is clear that among the drug-using populations the risk of HIV and other BBVs goes beyond the injection of psychoactive drugs and the stereotypical, media-fuelled image of a 'drug injector'. The challenge for health professionals is to reduce risk behaviours and in turn, prevent the spread of infections among all people who use drugs including those who use AS. Healthcare services must find opportunities to offer testing and treatment for BBV, as well as advice and information regarding injecting behaviours and sexual health to this population. It is proposed that nurses and other healthcare professionals have the opportunity to apply their skills and knowledge to deliver interventions to people using AS, including HIV testing, and increasing their awareness of AS use and associated risks will support this.

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Cardiovascular disease and HIV: answers to the self-assessment quiz

1. Options **b**, **c** and **d** are all potential causes of cardiovascular diseases including congenital disorders and arrhythmias
2. The correct answer is **c**
3. The correct answer is **b**
4. Answers **a** and **b** are correct
5. Answers **c** and **d** are true
6. The correct answer is **b**
7. Correct answers include **CAC**, **IMT**, **CIMT**, **CRP** and **IL6**
8. **All** of the responses are associated with advancing age
9. Answers **a**, **b** and **c** apply. Answer **d** also probably applies, given the current evidence.
10. Activity in the amygdala area of the brain increases during times of emotional stress. This heightens bone marrow activity, which in turn increases inflammatory responses.
11. The statement is **true**
12. Statements **a** and **b** are true