**Viewpoint**

**Nicotine and e-cigarettes: Rethinking addiction in the context of reduced harm.**

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 Addiction is often considered synonymous with harm and suffering. An act of harm to oneself and often others, historically it has been viewed as an issue of social and moral recalcitrance. Substance abuse (recreational or dependence related) also creates a multi-billion-pound public health bill, and this, added to the fact it is often deemed an act of ‘self-harm’ or ‘self-destruction’, incites little in the way of public sympathy. The idea of addiction as a disease or disorder has heightened the public perception that it must, like all diseases, be treated.

 Addiction need not *always* be seen through the lens of harm, but perhaps counterintuitively also as harm-reduction. A better understanding of the concept of addiction and the role it plays in perpetuating harmful behaviour could in fact serve the purpose of health preservation and public health protection. Furthermore, it is contended here that in the case of long-term harm-reduction initiatives, such as the exclusive use of e-cigarettes, there needs to be greater support in managing an important psychological shift from user to consumer, and an acceptance of enjoyment and choice where harm is shown to be reduced compared to tobacco. Current divided opinion in public health and differential interpretation of research evidence around the harms of sustained nicotine use may make it harder for consumers to make a fully informed choice to switch from smoking to e-cigarette use. Clearer public health messages need to be agreed upon and conveyed to the public.

 The term addiction itself is poorly defined with lack of agreement among scholars. That smoking behaviour is continued despite the well documented effects on health and the low cessation rate clearly testifies to its addictive properties. Yet despite its addictive potential, smoking rates have continued to decline over the last five decades, and in the UK, smoking rates are at an all-time low, with many achieving abstinence unaided. However, in the face of all the evidence (increased risk of smoking related diseases), policy (taxation, packaging) and treatment offered there remains a group of the population for whom smoking is still prevalent.

 Though relatively harmless compared to the full potential effects of tobacco smoking, it is generally accepted that nicotine is *the* addictive substance that drives smokers to continue to smoke despite the obvious dangers. Smoking is therefore generally accepted as a manifestation of nicotine addiction. However, there is increasing evidence that the addictive properties of nicotine depend on the mode of delivery (Costello, Reynaga, Mojica, Zaveri, Belluzzi, & Leslie, 2014) and it is suggested that nicotine may be just one element among many that drive smokers. It is now becoming widely accepted in the UK, that switching completely from smoking cigarettes to using e-cigarettes (vaping), is a much less-harmful (though not harmless), way of receiving nicotine (Shahab et al., 2017). That e-cigarettes mimic the action of, and are a replacement to, cigarette smoking may be one reason why there is misunderstanding and scepticism around their use. Furthermore, that nicotine is addictive relates to the greater social philosophy that addiction is an indicator of personal weakness (Morrell, 1996). An excellent example was recently provided by Thirlway (2016); her social observation highlighted that the use of e-cigarettes was a complex issue of both moral reasoning and problems with self-identity (addict versus non-addict).

 It is suggested here that misconceptions about being ‘an addict’ may in the long-term be damaging and in turn undermine efforts for harm-reduction. We raise three important issues around the philosophy of addiction and e-cigarette use that are of timely relevance to public health messages.

An issue of control

 If we accept the notion that addiction may be characterised by a degree of loss of control, but that this ‘loss of control’ may be something that serves harm minimisation compared to the use of a much more harmful alternative, perhaps the concept may be less stigmatised. In relation to e-cigarettes, the level of control is unclear; whilst most vapers maintain steady nicotine intake despite lowering the nicotine concentration in their e-liquid over time (Etter, 2016), there is evidence of a level of control over use that is uncharacteristic of other addictions. As examples: preferences for differences in nicotine concentration according to time of day or lifestyle and social circumstances, and time to use after waking is longer for vapers than for smokers (Dawkins, Turner, Roberts & Soar, 2013). Also, a small percentage of vapers have progressed to using liquids containing zero nicotine (Farsalinos, Poulas, Voudris & Le Houezec, 2016). Though these data are not definitive in relation to autonomy, it raises the question of what level of self-control over a less harmful alternative would be a cause for concern?

Why is the act of pleasure so problematic?

 Pleasure seeking is an enduring feature of human nature. Nevertheless, pleasurable behaviours can, in many instances, invite a degree of risk. However, a sense of freedom and pleasure in the act can be a driver for harm reduction in itself. The enjoyment, pleasure and interest in the wide range of e-cigarette products has generated support and advocacy which has not been matched by other forms of nicotine replacement. In other words, the pleasure in the act of vaping is one of the key reasons it has been adopted as a harm-reduction tool.

 Society’s idea of a substance free end point in treatment could be detrimental to this endeavour as enjoying substances which are pleasurable and self-satisfying is often deeply ingrained in feelings of shame. While some have argued that other forms of treatment are successful for quit attempts without the need for pleasure or paraphernalia (Parrot, 2015), that need not mean that harm-reduction should be pleasure exempt. Indeed, we need not promote a ‘*this or that*’ model of harm-reduction, but a widening of current strategies, to ‘*this and that*’. In fact, a widening of harm-reduction strategies and the promotion of pleasure and choice should be a high priority for hard to reach populations.

The issue of dependence

 Long-term nicotine addiction is a concern for many health professionals and some smokers themselves, perhaps reflecting misconceptions of the risks of nicotine versus smoking (ASH, 2016). Whilst it is acknowledged that more research is needed into the constituents and long-term effects of e-cigarettes, the public deserve an accurate and balanced evidence base in order to inform their choice.

 Perception of the purpose of addiction substitutes e.g., methadone, subutex or e-cigarettes is that they are intended to eradicate the addiction. Research into early and now obsolete models indicate that e-cigarettes which contain nicotine help smokers to quit when compared to placebo e-cigarettes, and that the effect is equivalent to that of nicotine patches (Hartmann-Boyce, McRobbie, Bullen, Begh, Stead & Hajek, 2016), but can and for many do, involve the continued use of nicotine. However, given that a fundamental element of addiction is relapse, there can be many benefits of long-term dependence on a less harmful substance by reducing the risk of relapse to a much more harmful alternative.

Conclusion

 Continued long-term abstinence from smoking is notoriously difficult to achieve. Pleasure and continued dependence are often seen as negative components of addiction but in the case of e-cigarettes these are the very elements that keep the user attached to a less harmful substance. When contrasted to the deadly cigarette, perhaps it’s time to re-think the circumstances under which addiction per se is a problem?

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**Conflict of interest:**

SC: has no conflict of interest.

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