

Vaping

A healthier alternative to cigarettes, or is it all smoke and mirrors?

Tobacco use remains the single most preventable cause of death in the world, yet has been previously glamourised by celebrity and social constructs (Castaldelli-Maia et al, 2015). Together with advertisements including medical professionals promoting the 'health benefits' of smoking, historically peers have also encouraged engagement to those within their social group in order to form relationships, on the understanding that once the initial taste of smoking has been accustomed to, good times with those around them are ensured (Chapman, 1995. Castaldelli-Maia et al, 2015). Due to the social and addictive nature of smoking, once an individual has become dependent on the effects of the habit it proves difficult to disengage, despite the since long-known negative health outcomes associated with first- and second- hand smoking (Lim et al, 2012).

In response to the growing evidence against it, In March 2004 Ireland became the first nation to ban indoor workplace smoking in the name of public health; citing that ten years extensive research had found that partial bans did very little to decrease the cancer risk to those who smoked, concluding that a total ban on smoking in public indoor areas was the best course of action (Schmidt, 2007). This ground-breaking change in the law sparked a conversation worldwide, with many countries such as New Zealand, Bhutan, Sweden and others also making the decision to ban smoking in workplaces in efforts to improve the health of the population (Schmidt, 2007. Lim et al, 2012), as well as catalysing research into smoking cessation strategies including vaping (Arnold, 2014).

The rise of vaping units has been relatively rapid and their use multifaceted, so the positive and negative dimensions will here be explored from a balanced perspective, summarising evidence on both sides acknowledging that whilst the inception of vaping may have been with harm-reduction in mind, there may in conjunction be negative implications which may need addressing with future action.

Vaping, a relatively recent phenomenon, has captivated millions worldwide as an alternative to traditional smoking (Bonner et al, 2021), the roots of which can be traced back to the early 2000s when Hon Lik, a Chinese pharmacist, developed the first commercially viable electronic cigarette as an alternative to traditional smoking (Arnold, 2014). Lik's

invention marked a significant departure from tobacco smoking, and whilst presently there are many variations to the original model, the general design remains the same; the unit uses a heated element on one end to aerosolise a nicotine-based solution inside the barrel of the unit, which is then inhaled into the lungs (Arnold, 2014). Following the invention of vaping and success of pilot models, sales of e-cigarettes grew over time, initially within the smoking population who required a smoking cessation aid and gradually migrating into the mainstream population (Ayers et al, 2018).

The subsequent rapid and un-regulated growth of the vaping industry within the mainstream led to regulatory challenges, with governments struggling to categorize and control these novel devices that were sold almost exclusively online in their infancy, then later sold in convenience stores and off-licences making them as accessible, if not more so, as traditional cigarettes (Palmer et al, 2018. Tsai et al, 2018). As the use of vaping technology and its popularity has developed, so to have the technological aspects and innovations of the devices themselves, adapting from resembling traditional cigarettes at their inception to the more recent “mod/pod” systems possessing actions such as variable wattage, temperature control and a wide variety of flavours, thus resulting in compounded popularity and the creation of a subculture of hobbyist vapers circulating on social media (Rom et al, 2014).

At their creation, one of the main primary arguments in favour of vapes and e-cigarettes was that they were centred on harm reduction. For decades traditional tobacco smoking has been shown to be indicative of many adverse health outcomes (Tsai et al, 2014), and so the need for smoking cessation strategies arose. Smokers seeking alternatives to smoking to aid them in quitting or reducing consumption of tobacco without completely overhauling their ingrained habits turned to vaping, with initial studies suggesting that vaping can be less clinically harmful to its users than smoking traditional cigarettes, as it eliminates the combustion process responsible for many of the toxins found in tobacco smoke (Rom et al, 2014. Tsai et al, 2018. Abafalvi, 2019. Bonner et al, 2021).

Due to the fact that vaping provided an almost identical experience to tobacco smoking, it was perceived that the transition from smoking to vaping would be well-adapted to and cause minimal disruption to ingrained habits, with the hope that this would maximise the likelihood of adherence and result in lower tobacco-related co-morbidities (Ling et al, 2004. Rom et al, 2014. Couzin-Frankel, 2019. Calder et al, 2021). Along with the inception of

vaping came the introduction of traditional cigarettes, cigars, and tobacco being packaged with use of statistics and imagery on the external wrapper to further support the evidence that tobacco smoking was a negative health behaviour that needed changing, whereas vapes and e-cigarettes did not possess this packaging which further emphasised vaping as a more positive and 'healthier' alternative (Bonner et al, 2021).

Following the introduction of this packaging on tobacco products, the stigma around traditional smoking grew; the growing evidence around the detrimental health implications of smoking painted the practice as dirty, odorous, uncouth, thus it became socially less acceptable to be a traditional smoker. This then further isolated smokers and provided a stronger argument in favour of vaping which was perceived as 'cleaner', emitted a more pleasant aroma to those in the vicinity of users, and wasn't banned in indoor areas (Casteldelli-Maia et al, 2015).

Following constant developments in technology, vaping units are growing closer in experience to traditional smoking, with the addition of nicotine in some models and an ever-increasing library of flavours across the market, making the likelihood of uptake and adherence to vaping as a method of smoking cessation stronger (Couzin-Frankel, 2019). Arguably this is further of benefit to demographics such as those in pregnancy, where not only would smoking indicate health detriments to the mother but also the foetus, thus making it of even greater importance that they find healthier habits than smoking that are easily adhered to (Calder et al, 2021). Limited studies so far have shown very little evidence to support implementing active promotion of vaping within the demographic, however the current evidence following trials shows that whilst in-utero nicotine is of detriment the negative health implications surrounding vaping are lesser than those surrounding traditional tobacco smoking (Calder et al, 2021).

Vaping has played a role in changing societal norms around smoking. The rise of vaping culture, fuelled by diverse flavours and customizable devices, has created a community that distinguishes itself from traditional smokers (Casteldelli-Maia et al, 2015. Bonner et al, 2021). This shift has, in some instances, led to a de-stigmatisation of nicotine consumption, providing an alternative that is perceived as less intrusive and more socially acceptable.

Vaping has undeniably had a profound impact on popular culture. Social media platforms are flooded with influencers showcasing their vaping experiences, participating in

cloud-chasing competitions, and promoting various products (Cortland et al, 2019), and due to the fact that this is all circulating on internet platforms more heavily engaged with by those younger in age, arguably vaping and e-cigarettes are being actively promoted to even younger audiences than if they were as socially stigmatised as traditional tobacco products (Cortland et al, 2019. Bonner et al, 2021). The normalization of vaping, coupled with its association with lifestyle and identity, has contributed to its widespread acceptance, however this cultural shift also raises questions about the ethics of marketing and the influence of social media on shaping perceptions (Palmer et al, 2018). The glamorization of vaping can create a dichotomy between the perceived 'coolness' of vaping and the potential health risks associated with nicotine consumption, arguably downplaying the potential health risks that still exist to those who vape (Palmer et al, 2018. Davidson et al, 2019).

Whilst the introduction of vaping and attempts at ensuring transition from tobacco to vape is kept as seamless as possible for those using as a method of smoking cessation, on the other hand the rise of user-friendly pod systems, the acceptance of vaping socially, and the wide range of appealing flavours has made vaping more accessible to beginners (Arnold, 2014. Abafalvi, 2019). Compact and convenient, these devices have not only contributed to the proliferation of vaping (Bonner et al, 2021), but they also raise concerns about the potential for increased nicotine consumption, especially among those new to vaping or those who may well have not engaged with any smoke/vapour inhalation units if not for the development of more user-friendly devices (Davidson et al, 2019).

As the vaping industry has expanded, regulatory challenges have emerged. In light of growing evidence that vaping is not entirely healthy and actually does pose health risks of its own including nicotine addiction as well as heart and lung conditions (Davidson et al, 2019), Governments worldwide have had to rapidly consider how to manage these products effectively as the debate over whether to treat vaping as a smoking cessation tool or as a potential gateway to nicotine addiction among non-smokers that has intensified in recent years (Tsai et al, 2018. Davidson et al, 2019. Bonner et al, 2021).

In response to these growing health concerns, many countries implemented regulations such as age restrictions, flavour bans, and advertising limitations (Cortland et al, 2019. Davidson et al, 2019). However, these measures have themselves sparked controversy, with proponents arguing that excessive regulation might hinder the potential benefits of vaping for smokers looking to quit (Rom et al, 2014. Cortland et al, 2019), thus striking a

balance between protecting public health and providing harm reduction options remains a significant challenge for regulators.

While vaping has been positioned as a harm reduction strategy, concerns persist regarding its impact on public health in general. The presence of nicotine in e-liquids raises questions about addiction, particularly among younger users; The allure of flavoured e-liquids, although attractive to adults seeking an alternative, may also contribute to the normalization of nicotine use among the youth population who may not have engaged with vaping at all if not for these appealing flavours, easy access and developing social norms (Davidson et al, 2019).

Additionally, the emergence of vaping-related lung injuries, often linked to the use of illicit substances, has raised alarms. Cases of severe respiratory distress and fatalities have led to increased scrutiny and calls for tighter regulation, whilst the argument of vaping still yet being a better health behaviour than traditional tobacco smoking is still up for debate (Cortland et al, 2019. Davidson et al, 2019. Bonner et al, 2021). Another challenge in regulation also lies in distinguishing the legitimate vaping products designed for harm reduction and smoking cessation from the potentially dangerous counterfeit or adulterated products circulating in the market; currently there is no restriction in regards to the sale of - or interference with - vaping units on the internet, potentially endangering the health of those purchasing on online platforms (Couzin-Frankel, 2019). Additionally, vaping units can also be easily interfered with malicious intent; due to the nature of some vaping units being replenished by a non-regulated bottle of clear liquid it is easily conceived that the liquid inside the bottle may not be as it seems, with cases of 'vape spiking' on the rise at social gatherings the same way alcohol historically has been (Bonner et al, 2021).

As we move into the 2020s, the future of vaping remains uncertain. Ongoing research continues to investigate the long-term health effects of vaping, with a focus on understanding its potential benefits and risks. The industry is at a crossroads, with some companies positioning themselves as advocates for harm reduction and smoking cessation, while others explore new technologies and innovations (Palmer et al, 2018. Bonner et al, 2021). Going forward the role of vaping in tobacco harm reduction strategies is likely to be a key area of focus. Striking a balance between providing adult smokers with alternatives while preventing youth initiation will be crucial for the credibility and sustainability of the vaping industry.

In conclusion, a critical examination of vaping reveals a complex landscape characterized by technological innovation, cultural shifts, regulatory challenges, and ongoing public health concerns. While vaping presents a potential harm reduction option for smokers, its cultural impact and health implications demand careful consideration. The challenge for society lies in navigating a path that maximizes the benefits of harm reduction without compromising public health, especially among vulnerable populations. As the vaping industry continues to evolve, a nuanced and balanced approach is essential to address the multifaceted issues surrounding this controversial and rapidly changing phenomenon.

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