E-cigarettes and harm reduction: a view from sub-Saharan Africa

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The promotion of e-cigarettes as a 'harm reduction' tool has prompted debates in tobacco control, sometimes dividing the global public health community.[1] Meanwhile, e-cigarette use is growing, especially among adolescents and high school students[2] in many parts of the world. In sub-Saharan Africa, which is at an early stage of the tobacco epidemic,[3] e-cigarettes are also being promoted by tobacco harm reduction advocates as a harm reduction intervention such as in the rest of the world.[4]

The WHO Framework Convention on Tobacco Control (FCTC) defines 'tobacco control' as '…a range of supply, demand and harm reduction strategies that aim to improve the health of a population by eliminating or reducing their consumption of tobacco products and exposure to tobacco smoke' (World Health Organization,[5] pg. 4). Thus all tobacco control strategies are 'harm reduction', given that they seek to reduce tobacco-caused harm.[6] Tobacco use prevalence has declined significantly in many countries since the adoption of the FCTC,[7] and several countries in sub-Saharan Africa now have daily smoking prevalence below 10%.[7] However, smoking cessation services for nicotine dependence as provided for in FCTC Article 14 implementation guidelines are not widely accessible, especially in the Africa region.[7] This gap is being exploited by the tobacco industry with products marketed as harm reduction tools.[8]

Debate about the potential for e-cigarettes as a harm reduction strategy are typically centred around the priorities and policy contexts of high-income countries. However, sub-Saharan Africa presents a unique scenario and context where e-cigarettes may not be beneficial to public health when assessed against the core principles of a contemporary definition of harm reduction.

HARM REDUCTION FOR ILLICIT DRUG USE

Harm Reduction International defines harm reduction as 'policies, programmes and practices that aim to minimise the negative health, social and legal impacts associated with drug use, policies and laws'. It is grounded in justice and human rights and focuses on positive change and on working with people without judgement, coercion, discrimination or requiring abstinence as a precondition of support.[9] It operates from a pragmatic framework which aims to balance moralistic and medical models of harms related to drug use.[10]

The WHO recognises harm reduction as an effective element of a public health promotion framework to reduce and mitigate drug use-related harms.[11] In the WHO's consolidated guidelines for HIV, viral hepatitis and Sexually Transmitted Infections' prevention, diagnosis, treatment and care for key populations (2022), harm reduction is a core health intervention (including needle and syringe programmes, opioid agonist maintenance therapy and naloxone for opioid overdose management) for people who inject drugs. Research shows harm reduction interventions reduce drug-related antisocial behaviours, morbidity and mortality, while not increasing drug use initiation.[12] They have been promoted due to the limited effectiveness of other approaches, including punitive ('War on Drugs') and abstinence-centric interventions.[13] There is strong evidence of the public health benefits of drug decriminalisation and increased access to harm reduction and drug dependence treatment interventions.[12] Modelling suggests that at the population level, it succeeds in lessening average harms of drug use when initiation of drug usage is mitigated and when compensatory behaviour is accounted for.[14]

Despite its effectiveness for reducing morbidity and mortality, harm reduction is contested in some contexts.[14 15] Some critiques are rooted in concerns of paving the way for drug policy liberalisation, endorsement of drug use and political opposition towards supporting people who use drugs.[15] In a critical approach to public health, there is contention that harm reduction places emphasis on short-term rather than long-term goals.[16] Further, a singular focus on harm reduction may leave overarching issues unaddressed, allowing states and the public to disregard the importance of drug control and addressing the root causes of drug use disorder.[16] There are also concerns about creating governmental and public acceptance of drug use, as well as endorsing passivity and resignation towards systemic change through legislation.[16]

DO E-CIGARETTES AIM TO MINIMISE THE NEGATIVE HEALTH, SOCIAL AND LEGAL IMPACTS OF CIGARETTE SMOKING?

E-cigarettes are increasingly popular among young people, many of whom would have not otherwise smoked cigarettes. Almost two decades since they began to be marketed, there is increasing understanding of the harms of e-cigarettes.[17]

A harm reduction intervention reduces harms at the individual and aggregated population level. Growing evidence suggests that long-term e-cigarette use could lead to significant individual and public health risk.[2 17] At the population level, increasing e-cigarettes use prevalence is likely to lead to higher rates of nicotine dependence and possible increased uptake of cigarettes, especially in younger populations,[18] thus compounding the adverse consequences of tobacco use.

Like traditional cigarettes, e-cigarettes increase heart rate and blood pressure, among other immunological and cardiorespiratory harms, ultimately potentially increasing the risk of heart disease, stroke and lung cancer.[17 19] Other health risks include increased asthma, tissue damage and genetic disruption.[20] Evidence suggests that e-cigarette aerosols have a higher concentration of metals than cigarette smoke[21] due to the metallic components of the device and can cause DNA damage and cytotoxicity.[22]

Risk assessment studies have argued that comparison of e-cigarette and traditional cigarette harms is futile as the products differ significantly in usage, composition,

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mechanisms of nicotine delivery and the bodily tissues they affect.[23] This makes it challenging and premature to conclude that e-cigarettes are safer or less harmful than traditional cigarettes. While many studies have shown that there are lower amounts of some toxins in e-cigarette aerosols than cigarette smoke,[24] less exposure does not always mean less harm as some tobacco-related diseases such as cardiovascular diseases are not dose dependent.[25]

There is also no evidence that e-cigarette use has contributed to reducing the social acceptance of cigarette smoking. In fact, concerns have been raised that e-cigarettes may undo efforts to reduce social acceptance of cigarettes and circumvent legal restrictions on cigarettes.[26]

IS THE PROVISION OF/ACCESS TO E-CIGARETTES ALIGNED WITH JUSTICE AND HUMAN RIGHTS?

Recommended public health interventions should be economically accessible to enable high coverage. However, e-cigarettes are more expensive than traditional cigarettes, limiting their accessibility[27] to higher socioeconomic groups, especially in sub-Saharan Africa where cigarettes taxes are very low.[28] Also, the informed choice to use a product, in an autonomous way, links to the human right. To a degree, the use of e-cigarettes aligns with this harm reduction principle; however, the distortion of known and potential harms of e-cigarettes and limitation of this information being shared with people who use tobacco products, would prevent and go against the principle of justice and informed decision-making.

ARE E-CIGARETTES TARGETED AT AND AVAILABLE FOR PEOPLE WHO SMOKE/USE NICOTINE PRODUCTS?

E-cigarettes are being aggressively marketed to people who do not use tobacco products, particularly young people[2]—branded and advertised as unique and fashionable, delivering multiple exotic flavours and easily concealed packaging.[2] E-cigarettes have been designed as recreational products rather than cessation aids or harm reduction tools.[29]

This approach contrasts with harm reduction principles, given it is not specifically focused on or only available to people who already use tobacco. Nicotine salts in e-cigarettes now allow for higher quantities of nicotine to be consumed, increasing the likelihood of developing dependence and possible transition to cigarettes.[30] A systematic review and meta-analysis showed that young people who used e-cigarettes were 3–4 times more likely to start smoking than those who do not use e-cigarettes.[31] If e-cigarettes products were intended as harm reduction, the model of unrestricted marketing and access currently prevalent in most parts of sub-Saharan Africa would make it counterproductive.[32]

IS THE EMPHASIS OF THE PROMOTION OF E-CIGARETTES ON SUPPORTING POSITIVE CHANGE?

E-cigarettes have been promoted as cessation aids for treating nicotine dependence,[33] despite insufficient research supporting these claims outside clinical trials[34] and insufficient empirical evidence of the effectiveness of e-cigarettes to support smoking cessation at a population level.[34 35] Additionally, it has been argued that novel tobacco and nicotine products are necessary for people who currently use tobacco products and are unwilling or unable to quit ('hardened smokers').[8] However, evidence shows that in contexts where effective tobacco control is implemented, the remaining base of people who use tobacco show susceptibility towards cessation; smoking fewer cigarettes and making more cessation attempts in a process called 'softening'.[36]

While some studies have shown some efficacy of e-cigarettes in helping individuals quit, these conclusions were based on research in controlled clinical settings.[37] In real-world settings, e-cigarettes have not been found to be associated with long-term cessation.[34] The use of e-cigarettes as a cessation aid has been shown to be associated with a higher likelihood of return to smoking compared with those who did not report using e-cigarettes.[2 34] A systematic review found that those who use e-cigarettes were 28% less likely to quit smoking than those who do not use e-cigarettes.[34]

IS ABSTINENCE FROM NICOTINE PRODUCTS REQUIRED TO USE E-CIGARETTES?

Evidence suggests that a substantial proportion of people, including adolescents, who use e-cigarettes to either reduce or quit cigarette smoking end up using both products.[17 38] Dual use of cigarettes and e-cigarettes has been found to be more harmful than using either product alone.[17] Transnational tobacco companies who have bought into manufacturing and marketing e-cigarettes have continued to aggressively market and manufacture cigarettes while promoting e-cigarettes as the solution to the problems they continue to create. When confronted by this contradiction, an industry official cited concerns for shareholders and partners as the reason for continued cigarette production.[1] The prioritisation of profit is the reason FCTC Article 5.3 obligates countries to protect tobacco control from the vested interest of the tobacco industry.[5] It is also why many opponents of a narrow industry definition of tobacco harm reduction do not believe that the industry should be trusted with the solution to solving the tobacco epidemic.

CONCLUSION

E-cigarettes as currently marketed do not consistently align with the core principles of a contemporary understanding of harm reduction. These products also target people who do not use tobacco. The adverse effects of using these products sometimes rivals those of cigarettes. The tobacco industry appears to have co-opted the concept of harm reduction to further their profits and influence policymakers rather than a transparent and authentic commitment towards fulfilling the principles of harm reduction.[1]

This is particularly problematic in sub-Saharan Africa. As harm reduction is designed to be part of an interconnected drug control strategy, the introduction of e-cigarettes alone cannot support a decrease in tobacco-related harms without a stronger base of tobacco control laws. Introducing such laws is a challenge for many countries in sub-Saharan Africa, which face both resource constraints and a high burden of other diseases. The already low and decreasing prevalence of tobacco use with existing tobacco control measures in most sub-Saharan countries decreases the feasibility of using e-cigarettes to achieve harm reduction objectives.

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