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Editorial Comment

Cancer risk and prevention in a globalised world: Solving the public policy mismatch ☆

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Abstract The world faces an unprecedented growth in cancer incidence over the next fifty years, the majority of the burden falling on low-middle income countries. At the same time as the changing demographic profiles, including global population ageing we are also seeing the rapid globalisation of pro-cancer behaviours and commodities such as tobacco. The human and economic impact will continue to be severe unless radical changes occur to current public policy mismatches in cancer prevention. At the same time high level political actions through bodies such as the UN suggest that supra-national approaches are needed to solve these issues. However, we argue that only local nation-state approaches can fundamentally address cancer risk and enhance prevention in a globalised world.

1. Commentary

In both developed and developing countries, a combination of ageing demographics and increasing exposure to carcinogens is rapidly increasing the incidence of cancer.[1] It is unlikely that low-middle income countries (LMIC) will be able to cope with the disease burden of cancer facing them over the coming decades in light of the fact that most LMIC will still be dealing with Group I causes (infectious disease et al.); the so called 'double burden' problem. Globally the political and policy focus has been on delivering cancer treatment, e.g. International Atomic Energy Agency ImPACT programme but, as many commentators have already made it clear this is not a path to better cancer public health.[2] The fact is that prevention remains the only serious option for managing the long-term socio-economic impact of cancer. However, the realisation of cancer prevention is seriously threatened by three key public policy mismatches.

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The first policy mismatch is funding. Through a combination of bibliometrics and direct analysis of R&D funding by major European, United States and Canadian funding sources, it is estimated that less than 4% of the overall annual public budget is spent on all types of cancer prevention.[3] The contribution from private sector is negligible (<0.2% of the total estimated direct spends on cancer R&D of just under 2 billion USD pa). Despite increased interest in chemoprevention and a prevailing interest in fundamental research into carcinogenesis, the level of support for population prevention has been steadily falling. A mixture of the global economic downturn and a greater 'national interest' in science & technology focus has meant that co-operative trans-national funding, essential for population prevention research, is increasingly scarce. At national level, the utilisation of research assessment frameworks dominated by scientometrics, works against prevention research, which takes many years to complete, yields comparatively fewer publications and compared to basic science, has a much lower citation impact.[4]

The second policy mismatch is the schism between a local prevention policy and the globalisation of patterns of exposure that determines cancer risk. Whilst many prevention policies and strategies are developed under international auspices e.g. World Health Organisation (WHO), the practicalities and logistics of implementation are left to individual countries. Given that tobacco smoking, obesity and alcohol consumption are major drivers of cancer incidence worldwide, a national strategy lacking co-ordination with other countries is doomed to fail. Risk factors are now globalised and take the path of least resistance, for example, tobacco industry turning to the markets of India and China, the food and beverage industry globalising the fast food, high alcohol intake and less physical activity culture. National policy needs to step up a gear up to encompass global co-operation and construct policy that fits somewhere between the pro-free marketers (i.e. Hayek, Friedman)[5] and distributive global justice schools (e.g. Amartya Sen).[6] Beginnings have been made in tobacco control but the momentum and scope beyond this remains dangerously low.

The third policy mismatch concerns our deficient understanding of human behaviour and the science of prevention. We have a limited understanding of e.g. why a widespread *knowledge* that excessive sunbathing increases the risk of malignant melanoma does not lead to a similarly widespread change in sunbathing *behaviour*. There is little understanding of how prevention messages are received in a setting where up until now large segments of the population have had short life expectancy and a high proportion of life spent disabled. The recent classification of mobile phones by the International Agency for Research into Cancer (IARC) as 'possibly carcinogenic to humans'[3] may be based on a rational process by which the evidence is judged but the conclusions are drawn to feel out of sync with common sense. Placing risk factors such as coffee and mobile phones together with pesticides such as dichlorodiphenyltrichloroethane Synthetic insecticide (DDT) appears to ignore basic human evolutionary psychology that is unable to frame such diverse 'risks'. There seems to be a policy blind spot to the contribution of human ethology when it comes to devising and implementing prevention strategies. There is little doubt that a better understanding of evolutionary psychology can bridge the gap between the science and the *real-politik* of prevention. For example, humans have a strong tropism for medicines (*pharmophilia*) and need ritual to create the concept of 'health value'.[7] This suggests that at least in some settings chemoprevention, which takes advantage of this *pharmophilia*, could be a more tractable tool for prevention strategies. However, the main message for policy makers is that there is currently a clear mismatch between the science of prevention, how the media reports this (erratically, hyped and irrationally),[8] and how the evolved evolutionary psychology allows people to frame risk. The human mind, it is now clear, contains a large array of what Tooby and Cosmides have called 'reasoning instincts'.[9] Indeed the evidence goes even further to suggest that our adaptive evolutionary environment has given rise to a form of mental risk-pooling which smooth's out the otherwise feast-famine cycle of everyday 'risk'. The implications for cancer prevention public policy are clear. Single messaging or even broad category messaging is unlikely to have any traction, thus the focus should be on macroeconomic approaches (supply and demand) rather than group behavioural engineering.

Some of this mismatch has been recognised by the recently launched Non Communicable Diseases (NCD) alliances as the forthcoming UN High Level Summit approaches[10]; but no one has yet to find a way to bridge the local-global cancer prevention problem. The modern era is one of globalisation that provides a multitude of ways for anti-health commodities and behaviours to spread from one locality to another. Checking and rolling back this advance is no easy matter in market driven economies; one only has to look at what has happened to obesity in the USA.[11] But tackling these globalised forces head can only lead to Global Health's Stalingrad. What is needed are local, and by this we mean nation-states, cancer prevention strategies that can be linked 'chainmail' into regional blocks. Building effective local cancer prevention infrastructures and programmes requires both institute-to-institute and advocacy group collaborations. Building up local capacity and engagement is the only way to avoid this type of health programme collapses that have been seen when the external resourcing and funding dries up.[12] The global mismatch can only be addressed with local motivation and capability.

Conflict of interest statement

None declared.

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