these shortcomings, discuss them in their article and performed a sensitivity analysis.

References

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**Seven goals for public health training in the 21st century**

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Public health teaching is often described in terms of the disciplines it includes; epidemiology, prevention, health services research, etc., or the goals it seeks to attain; such as being able to investigate/evaluate/design this or that epidemiological study or prevention program. Yet it is much, much more than this. It is a means to prepare people to engage actively in a complex and changing world in ways that improve the health of the population. So, given this, what do we, who teach public health, want from young people taking on a career in public health training and research?

First, we want to stimulate curiosity. We need people who want to understand the world around them and not those whose horizons are limited by what is needed to pass an examination. We want people who are continually asking why, and who will not be satisfied with the answer ‘because I say so’. We particularly want people who will look at the widely accepted view and ask: Does this apply here, in these circumstances, in this population? This is more important now than ever, as we are faced with a neo-liberal agenda that is being clung to by much of the media and politicians in many countries despite overwhelming evidence that it is devastating our economies and, in countries such as Greece, Spain and Portugal, damaging the health of our fellow Europeans.

Second, we want to produce people who are willing to take the initiative. We need many more social entrepreneurs, people who will spot an opportunity and go for it. We need people who are prepared to take risks. But we will then need to be willing to accept failure. We still adhere to a culture where the message is often that it is better to do nothing than to risk failing. Our junior staff must know that if they do something and it goes wrong, we take the blame.

Third, we want to help people to make connections. Over the past half century, epidemiology has achieved an enormous amount in identifying individual risk factors. But we need to be able to look upstream, to identify the causes of the causes, and downstream, to understand the biological mechanisms. In our work in Russia, we have shown that alcohol is the main cause of the catastrophically low life expectancy. But we must look upstream to ask why Russians drink the way they do, as well as look downstream to ask why so many heavy drinkers die suddenly, with clean coronary arteries, because in this way we can also gain insights into the nature of cardiovascular disease in other heavy drinking populations that may be more difficult to study.

Fourth, we want to convey the big picture. This is not at all easy to do with the tools at our disposal, especially when we constrain ourselves with narrow frameworks for assessing cause and effect, such as Koch’s postulates or Bradford Hill’s criteria of causality. These frameworks have a very important role, but only in certain circumstances. To take another example from our own work, we know that levels of tuberculosis vary widely in different parts of Africa. But why? There are many reasons, and one is the extent of mining. We have shown how mines act as amplifiers for these diseases, in the same way that prisons do in Eastern Europe. We can never do an randomised controlled trial to prove it, but with some imaginative use of data, supported by mathematical models, we can provide strong evidence of a link.

Fifth, we want people to know what they are up against. The most obvious example is the tobacco industry, which has spent years undermining efforts to tackle the leading cause of premature death in Europe. But there is growing evidence of the damage to health caused by large corporations in other areas, such as the food and pharmaceutical industries. More than ever, the public health professional needs to read the Economist, the Financial Times and the Wall Street Journal.

Sixth, we must support people to engage with key decision makers at all levels. To do so, we in public health need a great deal more self-confidence. Too often colleagues say that they cannot comment on something because they do not know anything about it. Yet we continually hear eminent politicians and social commentators speaking on issues they clearly know nothing about, yet they have the self-confidence, or perhaps arrogance, to go on national radio or television to expose their ignorance. Given a few hours and a fast internet connection, most students could do a much better job of understanding the topics they addressed. We need to be careful that we do not stand up and talk nonsense, but at the same time, we must realize that many self-appointed experts have only the most
superficial understanding of complex issues, and we should not be reluctant to challenge them when their stupidity acts against the interest of public health.

Seventh, we must ensure that our students’ approaches to public health are firmly grounded in human rights. It is too easy to be complacent, to think that, here in Europe in the 21st century, we have learnt the lessons of the 1930s, and such things could never happen again. Yet there is a real danger that the terrifying absence of political leadership in Europe today could too easily create the conditions that, in the past, led to the rise of totalitarianism. The warning signs are already there, with dark forces in several European countries using populist messages to exploit fear and anxiety about minorities. A democratic society based on social justice and equal rights for all are core requirements for a healthy society.

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References