

Concepts Concerning 'Disease' Causation, Control, and the current Cholera Outbreak in Zimbabwe

Knapp van Bogaert D, PhD, D. Phil

Steve Biko Centre for Bioethics, Faculty of Health Sciences
School of Clinical Medicine, University of the Witwatersrand, Johannesburg

Ogunbanjo GA, FCFP(SA), M Fam Med, FACRRM, FACTM, FAFP(SA)

Dept. of Family Medicine & PHC, Faculty of Health Sciences,
University of Limpopo (Medunsa Campus), Pretoria

Correspondence to: Prof D Knapp van Bogaert, e-mail: Donna.VanBogaert@wits.ac.za or Prof GA Ogunbanjo, e-mail: gao@intekom.co.za

Abstract

There is an ethical necessity that doctors understand the complex social, political, environmental and economic dynamics involved in infectious disease outbreaks. This article discusses some important concepts concerning 'disease' causation and control with specific reference to the current cholera outbreak in Zimbabwe and its effects on the Limpopo Province in South Africa.

Ⓟ This article has been peer reviewed. Full text available at www.safpj.co.za

SA Fam Pract 2008;50(6):30-32

Introduction

Concepts concerning the cause of disease transformed with the evolution of human culture and remained inseparable from whatever system of beliefs was present in any given society, not much different from today. For example, ancient Mesopotamians believed an individual god ruled each body organ, just as they believed in a multitude of gods interacting as forces in their daily lives. Thus, should an organ become diseased, it was necessary to pray and sacrifice to appease the offended god. If by chance it healed, they offered further prayers and sacrifices. The Hippocratics relied on the four humours in their theoretical practice which included the ancient philosophical elements of *earth, air, fire and water*. With the first attempts to address diseases in an objective manner, they are credited with the first major shift away from thinking of disease as 'sin' on the part of the patient or divine retribution. However, such old beliefs may never be entirely eradicated and beliefs primal or otherwise may be reinforced and manipulated by prevailing ideologies.

In the 19th century, thoughts concerning disease aetiology fell under the influence of two developments that served as both a philosophical and an empirical basis for the biomedical approach to disease characteristic of modern medical practice. The first was the 'Cartesian revolution,' which gave rise to the idea that the mind and body were independent of each other. The second was the doctrine of specific aetiology or 'germ theory,' which was derived from the discovery of the microbiological origins of infectious disease. Together, they effectively denied the influence of, separately or together, any psychological, social, political, economic or environmental causes of disease. According to Cartesian theory, the body, conceived as a mechanical device, was an apparatus whose illness needed to be corrected through manipulation of its parts by mechanical experts (the medical professionals), a notion historically reinforced by Galen. 'Cure' was

effected through the neutralisation of particular adverse elements or by a modification of the physical process involved in a particular disease. While the Cartesian and the germ theory approaches to disease are still evident in Western medical practice today, they have been progressively challenged by multicausal models.^{1,2}

Discussion

Today the existence of infective agents such as microorganisms is seen as such an obvious truth that it hardly needs stating. For example, people are aware that they risk infection if injuries are left unattended and exposed to the environment. Two hundred years ago, such precautions were not so obvious. The threat posed by microorganisms was not part of common understanding, since such organisms had not been identified. This does not mean that until the introduction of the germ theory people were oblivious to the hazards of leaving an open wound untreated, but their conception of what would happen if they did so was very different from the idea of infective agents. Societies have approached the problems of infectious diseases, wounds, and illnesses in many different ways, and these approaches all made perfect sense to the people involved, however strange, if not irrational, they may seem from our vantage point in the 21st century.

Modern medicine as practised today may seem to be qualitatively different from these earlier applications because it is based on the 'rationality of modern medical science'. The evidence to support this position is compelling given that medical science purports to be able to diagnose, treat and cure infectious diseases that have affected humans for thousands of years. Another difficulty with this approach is that it only tells half of the story. This is because both medicine and science exist in social contexts that serve to limit as well as challenge their activities. A valid example is found in the Henle-Koch model of germ

theory. During the last two decades of the 19th century, scientists using the Henle-Koch model of germ theory discovered agents responsible for many infectious diseases, such as tuberculosis, plague, syphilis and cholera. Until then disease had generally been blamed on either a 'sin' on the part of the patient, a 'miasma' (atmospheric components made up of malodorous and poisonous particles generated by the decomposition of organic matter),³ or an ill of deliberate intent usually caused by those outside a patient's particular cultural circle. The Henle-Koch model of germ theory can and has been extended, and often overextended, to account for other processes. And it can be manipulated by those in power to grasp public imagination and can become part of a public and popular mythology.⁴

In the creation of such popular myths, the germ theory has been used both to label certain individuals or groups as potentially dangerous and as a metaphor for social persecution where the undesired group is perceived as germs or as nonhuman animals/germ carriers infecting the wider society or its more powerful members. Creation of such popular myths requires building on common fears, the basis of which probably rests in the fact of death, the great unknown, and thus by association involves the medical classifications of 'disease' and 'health'. For those in quest of power, popular myths may be used as a tool to classify members of a real or perceived oppositional power base, or simply undesirable members of society, as being nonhuman (germs) or sub-human (animals). This is because inherent in the germ theory is the perception that all germs and their possible animal sources should be eradicated. Thus, the classification of groups of people as 'vermin,' 'pigs,' 'rats,' or 'lice' serves to suppress any moral feelings concerning their treatment. 'Rational' man becomes irrational. In these mysterious and seemingly uncontrollable tragedies, the thin veneer of human reason peels back to expose a dark under surface capable of inexplicable atrocities. For example, during the plague epidemics, people sought to blame others; scapegoating was rampant, and xenophobia was the norm. This was reinforced by those in power through mediasised ideological constructs, or, as Thompson puts it, utilising "meaning mobilised in the service of power".⁵ After diseases are identified and labelled, they are inevitably classified. Medicine and science play a major role in the identification and classification of disease. From disease classifications, official responses to disease are manifested in policies. Policies are usually under the management and control of governmental agencies. Such departments of course include people in the roles of politicians, scientists and health care personnel.

From early times until now, those who hold power have determined the official response to disease, although admittedly epidemiological contexts differ. Generally, the powerful in society tend to claim that the disease in question targets only one particular set of people, while others are spared. While the history of Europe's plague epidemics serves as a well-known paradigm (the Jews having been the main targets of accusation), the 17th century cholera epidemics reveal a construction designed to deny its existence. In England, the second and third cholera pandemics were enhanced by the concomitant industrial revolution, which caused a vast migration of people from the countryside to the cities in search of jobs. One consequence was the unregulated growth of tenements and slums. These workers (poor and generally uneducated) were considered expendable by those in power. For example, Watts points out that thoughts of supplying fresh water and removing waste was furthest from developers' minds as 'industrialists cut corners in order to maximise profits'.⁶ This meant that the living conditions of the workers were conducive to disease outbreaks, and no remedial measures were put into place as workers

were considered (and for some time were) easily replaceable. Because such workers were socially constructed to represent the dregs of society (uneducated, ill-mannered, immoral), it was easy for those in authority to pursue their power bases unchallenged. Thus, when the cholera epidemic reached London, it struck the working class. However, nothing was done to ameliorate it and in fact its existence was denied. For example, in London officials were reluctant to quarantine ports or even incoming ships lest the emerging textile industry be harmed. Watts explains that the local administration made the claim that there was no cholera in England. This unwritten policy remained in effect for almost 20 years and did little to limit the extent of the epidemic, or its impact on the working class.

Thus, the meaning of disease and the diagnostic expressions accompanying them ultimately find their meaning in what is done (or not done) with them rather than what may be said (or unsaid) about them. As Temkin puts it: *Disease ... is thought of as the situation requires. The circumstances are represented by the patient, the physician, the public health, the medical scientist, the pharmaceutical industry, and last but not least, the disease itself ... our thinking about disease is not only influenced by internal and external factors, it is also determined by the disease situation in which we find ourselves.*⁷

Much of the discussion concerning the reconception of medical practice (and thus disease concepts) is attributable to Michael Foucault who, amongst his other insights, recognises that the development of modern medicine has taken the particular route that it has because it simultaneously constructs its own object of enquiry and comes up with ideas to explain and deal with it. Two examples will suffice: to the prescientific physician, the evidence for the existence of 'humour' was as compelling as the modern doctor's acceptance of laboratory test results; just as medieval anatomists using Galen's account of the human body could 'see' what he had told them was there because that was what they were supposed to see. Medicine, then, provides internally both inquisitional objects and answers. Furthermore, Foucault identifies how in the creation of hospitals came what he describes as the 'clinical gaze' which established the idea that disease was a discrete phenomenon of the human anatomy. He claims the gaze is a way of seeing and understanding that becomes identical with the thing itself.⁸

For Foucault, there are no fixed meanings or even the possibility of an appeal to an external reality. For this reason, he has often been identified with a philosophical approach known as 'social constructionism'. In this way of thinking, emphasis is placed more on how health and illness are created and understood by society and social processes than on seeking to find their biological basis. Similarly, Turner and Douglas maintain that in many cultures the body has been perceived as an image of society.^{9,10} As a result, notions about the body will often relate to prevailing ideas about society.

In a different way, Foucault makes the point that it is not only how medical science sees the body that is affected by discourses of knowledge, but also how people themselves view their own bodies.¹¹ For example, the shift from traditional agricultural to industrialised societies was marked by a shift in people's conception of their bodies, from one of 'fleshy' to one of 'mindful'.¹² What this implies is that instead of the body being just an object synonymous with the person, a central role is placed on the mind in directing not only what the body does but also the responsibility for its actions.

The rise of the 'mindful body' itself changed the nature of health and illness as new 'problems' and new 'solutions' became commonplace in medicine. For example, before and during World War II, the body of Germany was 'sick'. To cure the nation-body, most German medical professionals capitulated to the prevailing Nazi ideology eradicating the alleged 'cause' of its diseased state. An example from Nazi Germany captures this as authors Annas and Grodin state:

... the conduct of those who worked in the concentration camps was guided by a biomedical paradigm of the moral danger facing the nation ... the paradigm of the states' facing a physical threat to its overall well-being that could be alleviated only by medical interventions is reflected in the medical literature and training of healthcare personnel both before and during the war.¹³

The works of Foucault have confronted our ways of viewing what is accepted as normal and benign in that, he argues, it is a product of our own contemporary imagination or the 'fabrication' of discourses. Our challenge then is to locate the operation of 'micro power'. Ultimately, Foucault is concerned with the ways in which power permeates every aspect of society to the degree that everybody was (and is) involved in the exercise of it. For example, in his studies of madness and penal policy Foucault demonstrated that far from there having been societal progress towards more humane management of the mentally ill and prisoners, psychiatry and penology have in fact developed from increasingly stringent control and more invasive tactics.⁸ Thus, we can see how medicine is directly involved in issues of social control.

Most societies have to have some form of generally acceptable value systems or forms of social control if they are to remain relatively stable. This by definition means that there will be people who refuse to or cannot fit into the system, as well as people who for some reason society believes (or comes to believe, sometimes by purposeful manipulation) exist outside societal norms. Such people become seen and are often treated as societal deviants. Various groups at various historical periods have been viewed as 'social deviants' defined primarily by the prevailing societal norms (e.g. homosexuals, alcoholics, blacks). Scambler defines deviance as 'non-conformity to a norm or set of norms which is accepted by a significant proportion of a society's citizens or inhabitants'.¹⁴ Deviant behaviour then may be considered as a behaviour that, as soon as it has become public knowledge, is routinely subject to sanctions to punishment, correction or treatment. As many of Foucault's works identify, medicine has been involved in the construction and maintenance of forms of social control through socially sanctioned authority to define both medical problems and deviant behaviour.

In modern societies, doctors are generally responsible for collectively constructing and individually selecting and applying diagnostic labels as part of any society's social structure. It is recognised that the application and communication of some diagnoses have serious and unwelcome consequences for patients, most notably when the medical diagnosis is personally or socially stigmatising. Stigmatising conditions are any deviant conditions that set their victims apart from the 'normal' in a society. Thus, in this context, people suffering from certain diseases (e.g. AIDS, cancer, psoriasis, mental illness) or who are disease carriers (e.g. plague, typhus, cholera) have been in the

past and often continue to be, labelled as 'deviants'. Such 'deviants' tend to be rejected or shunned to varying degrees by others. Another consequence of labelling is that the stigma attached to the illness evolves to dominate perceptions of the person suffering from it, and this affects how the bearer of the stigma is treated by others. In this way, the deviant illness becomes the focal point whilst the person's social identity, including his or her past, can be subjugated.¹³ The societal implications of the practice of medicine as a form of social control, the labelling of persons as 'deviant illnesses' or carriers of disease, the ways in which perverse power intersects with disease perceptions, the changing concept of disease, are all important considerations for medical practitioners.

Conclusion

The recent finding of *Vibrio cholerae* in the Limpopo River was to be expected and it is likely to be identified in a myriad of additional water sources. Old beliefs such that water is "pure" and nothing should be added to it remain intact amongst some cultures.¹⁵ The media follows the cholera stories, counts the dead, and largely fails to inform the public as to the nature, cause and prevention of cholera.¹⁶ Health-seeking refugees escaping from Zimbabwe's collapsed healthcare system are "pouring into South Africa at a rate of 500 a day "...exposed to the weather and without regular access to toilets, showers, food and clean water."¹⁷ The media does little to educate and inform. We know from history that the populous can be manipulated by powerful ideologies. Particularly now following the earlier xenophobic attacks on "foreigners", there is an ethical necessity that doctors understand the complex social, political, environmental and economic dynamics involved in infectious disease outbreaks. We hope we have contributed to this awareness. 🙏

References

1. Luke, T. 1991. Community and ecology. *Telos*, 88: 69-79.
2. Eyles, J. 1994. *Social Indicators, Social Justice and Social Well-being*. Ottawa: McMaster Centre for Health Policy Publication.
3. Risse, G. B. 1993. Western medicine from Hippocrates to the germ theory. In: K. Kiple (ed.). *The Cambridge History of World Disease*. Cambridge: Cambridge University Press: 18.
4. Luckin, B. 1984. States and Epidemic Threats. *Bulletin of the Social History of Medicine*, 3: 34-42.
5. Thompson, J. B. 1990. *Ideology and Modern Culture*. New York: Polity Press: 7.
6. Watts, S. 1997. *Epidemics and History*. New Haven, Connecticut and London: Yale University Press.
7. Temkin, O. 1977. *The Double Face of Janus and Other Essays in the History of Medicine*. Baltimore: Witman Publishers; 7.
8. Foucault, M. 1965 *Madness and Civilization*. New York: Vintage.
9. Turner, B. 1995. *Medical Power and Social Knowledge*. London: Sage.
10. Douglas, M. 1970. *Natural Symbols*. London: Crescent Press.
11. Foucault, M. 1973. *Birth of the Clinic*. London: Tavistock: 196.
12. Shilling, C. 1993. *The Body and Social Theory*. London: Sage Publishers: 163.
13. Annas, G. J., Grodin, M. A. 1992. *The Nazi Doctors and the Nuremberg Code*. Oxford: Oxford University Press: 269.
14. Scambler, G. 2000. *Sociology and Medicine*. New York: W. B. Saunders: 171-173.
15. SABC Radio 105. December 5, 2008. 13:00. Comment from listener as to why people in area were reluctant to add bleach / purifying agent to drinking water.
16. See, for example: *Limpopo health dept waits on cholera results*. 2008. Mail and Guardian. Available at: <http://www.mg.co.za/article/2008-12-04-limpopo-health-dept-waits-on-cholera-results>; *Cholera found in Limpopo River*. 2008. News 24. Retrieved December 5 2008. Available at: http://www.news24.com/News24/South_Africa/News/0,,2-7-1442_2436262,00.html
17. Shaeffer, R. 2008. Quoted in: *Zim cholera expected to spread*. (IOL SAPA-IP). Retrieved December 5, 2008. Available at: http://www.iol.co.za/index.php?set_id=1&click_id=68&art_id=nw20081204090123411C788640