Is violence a disease?

Situating violence prevention in public health policy and practice

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Abstract

The paper provides a review of some of the thoughts, ideas, and opinions that pervade the public health literature concerning how to classify or conceptualise violence. It is argued that violence transcends classic distinctions between communicable and non-communicable diseases, distinguishes itself from the discipline of injury control, and is influenced by wider, social determinants. Through a discussion of these varied perspectives it is concluded that a fourth revolution in public health is needed – a "change in scope" revolution - that recognizes the influence of social justice, economics, and globalization in the aetiology of premature death and ill health, into which violence fits. However, rather than be shackled by debates of definition or classification, it is important that public health acknowledges the role it can play in preventing violence through policy and practice, and takes unified action.

Keywords

Violence, Prevention, Disease, Social determinants

Introduction

In the wake of the mass school shooting at Sandy Hook on 14th December 2012, and the release of the Report of the State's Attorney on the Shootings at Sandy Hook Elementary School[1] renewed attention has focused on how adopting a Public Health perspective may prevent, or at least reduce the frequency and deadliness, of such events.[2, 3] However, such high profile and tragic mass shootings account for relatively few deaths when compared to the daily toll of gun violence in the US[4, 5] let alone elsewhere in the world.[6] Furthermore, gun violence itself is only one cause of homicide, with a total global estimated burden of intentional injuries attributable to violence (not self-inflicted or war and conflict) of around 600,000 per year.[7] However, such fatalities represent the tip of the iceberg. Non-fatal violence is much more common, and despite having potentially devastating long-term consequences of the direct injuries sustained and indirectly as a risk factor for a broad range of physical and mental health outcomes among perpetrators, victims, families, communities, and wider society,[8] it is often underreported or even deliberately hidden by the victims.

Not only does violence pose a considerable burden as a major cause of mortality and morbidity[7] it has been predicted to rise over the coming years.[9] Despite some fantastic work by early pioneers[10-12] violence has only relatively recently been acknowledged as a major concern for Public Health at the 49th World Health Assembly in 1996, which was re-emphasised at the 67th World Health Assembly in 2014. What is more, it was only in 2002 that the public health approach to violence was formalised by the World Health Organization (WHO) in the *World Report on Violence and Health*[14] which

offered what is considered one of the broadest definitions of violence[15] emphasising the intentionality of the act and a broad range of outcomes:

> "The intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation" (p. 5).[8]

Whilst violence has been recognised as a public health problem, it has not achieved widespread acceptance. One reason for this is that it may be still viewed as the purview of the criminal justice system. Additionally, it could be that violence does not fit easily into the public health classification system which has been traditionally concerned with communicable and non-communicable disease. Given the centrality of classification to public health, difficulties with classification may impact how violence prevention is situated in public health policy and practice.

This paper will briefly cover some of the thoughts, ideas, and opinions that pervade the public health literature concerning how to classify or conceptualise violence. We begin with the consideration of the traditional classification system of communicable and non-communicable disease. This will then be followed by the consideration of the sibling issue of unintentional injury and injury control, before highlighting the social determinants perspective.

The scope of public health

Much of the early work in Public Health concentrated on sanitation and communicable diseases.[16] Public Health has, however, been adept at adapting to society's emerging problems. Despite this, Hanlon et al.[17] note that public health is now facing a number of emerging crises revolving around epidemics of obesity, drug and alcohol misuse, increased rates of depression and anxiety, reductions in general well-being, and widening global health inequalities. Moreover, it is acknowledged that while the scope of public health practice has broadened, it needs to grow further to address the "emerging epidemics of non-communicable disease … global environmental change, natural and man-made disasters, and … sustainable health development" (p.2085)[18] and the determinants of social and health inequities (e.g. poverty and weak social support systems)[19] that largely dominate discussions of health.

This view largely corresponds with the findings from the Global Burden of Disease Report [7] which highlights the way in which much of the developed and developing world has transitioned from communicable to non-communicable disease/conditions as the major cause of premature death.[20-22] Indeed, public health has been described as having passed through three revolutions:[23, 24]

1. *Infectious disease revolution* which was concerned with controlling and eliminating the infectious disease epidemics
2. *Chronic disease revolution* which aimed to increase human longevity through prevention of chronic disease
3. *Change in practice revolution* which aims to maximise the quality of human life

The argument is that as infectious diseases were mainly brought under control (Revolution 1) chronic disease posed the greatest threat to health. Correspondingly, as prevention efforts have succeeded in prolonging human life (Revolution 2) a change in practice is required to promote the quality of that extended life (Revolution 3). What we see here, however, as with other discussions of the history and future of public health is a focus on the traditional public health issues of communicable and non-communicable disease and a particular failure to acknowledge the role public health can and should play in addressing the burden posed by violence.

The violence epidemic(?)

Increased academic interest and media coverage have led many to believe that we live in violent times, perhaps the most violent in history. While the burden of violence is predicted to rise over the coming years relative to other conditions/outcomes,[9] following a detailed analysis of violence across the centuries Pinker concluded that "we may be living in the most peaceable era in our species existence" (p.xxi). Nonetheless, violence, in all its manifestations (self-directed, interpersonal, and collective[14]) touches all of our lives either directly or indirectly, and poses a considerable risk to public health across the globe.

In the context of long-term secular declines and its ubiquitous nature, violence has been referred to as endemic.[25] As with all endemic conditions, Christoffel notes that there is the risk of "epidemic flare" at certain times or in certain places.[25] Indeed, violence is often described as having reached epidemic proportions.[10, 26-28] While the term "epidemic" is often associated with the outbreak of a communicable disease in a

particular region at a certain time[29] Last notes that the term was broadened during the 20th century to include non-communicable diseases/conditions including behavioural health problems.[30] However, this issue has met with some debate. For instance, McDavid et al.[31] astutely note that "the notion of a non-communicable epidemic is in itself an oxymoron. How does a disease spread if it is not 'communicable' in some sense" (p.480). In contrast, Fagan, Wilkinson, and Davies[32] note that "epidemics need not be contagious" (p.689) citing an outbreak of food poisoning as one such example. Nonetheless, discussing violence in this way immediately frames it as a disease, but is it really a disease at all?

Violence as a disease

Violent injury has been described as the "neglected disease"[33]. The causation and transmission of a disease is explained through the host-agent-environment paradigm, which is also the basis for public health interventions (e.g. the Haddon Matrix[34]). While this paradigm has traditionally applied to communicable disease, in the second half of the 20th century the paradigm was expanded to account for non-communicable disease.[35] However, as early as 1970, Haddon[34, 36, 37] applied the paradigm specifically to the understanding of injuries (and many other public health concerns) where the underlying *agent* of injury is not a microbe or carcinogen but energy.[33] More specifically, injury has been attributed to bodily damage resulting from "acute exposure to thermal, mechanical, electrical, or chemical energy" (p.4)[38] most likely, mechanical force.[33, 39, 40] Further extending this paradigm from a focus on injury (and more specifically unintentional injury) to violence, Sattin and Corso[33] note that the host-agent-environment paradigm needs to account for the transfer of energy, the threat of

transfer of energy by perpetrators, and the effect of the social and physical environment. This analysis serves to highlight the similarities between violence and disease[40] and to violence being viewed as a disease process.[41]

Gilligan[26] notes that the pain, injury, mutilation, disability and death associated with violence is comparable to that caused by any bacillus or malignancy. Indeed, the trauma of violence has been compared to that of getting cancer.[42] Furthermore, Clark[43] asserts that given the highly contagious nature of the causes and effects of violence it is appropriate to refer to it as a disease; however, she does not describe specifically what is or how it is contagious. Perhaps surprisingly, however, some see it not simply as being like a disease but actually as one. For instance, Gilligan asserts that: “I am not using the terms ‘illness’ and ‘disease’ as metaphors when I apply them to the subject of violence: I mean them literally” (p.99).[26] Indeed, when one considers the relevant fundamental processes (host-agent-environment paradigm) as opposed to a description of appearances, as Haddon[44, 45] advises, violence can conceivably be considered a type of disease. If we accept this inference, it now begs the question as to whether violence is communicable or non-communicable in nature.

Violence as a communicable disease

The epidemic of “The disease called violence” (p.6) has been largely attributed to the apparent contagious nature of violence, [43] which shows the three main characteristics of a communicable disease in a population: clustering, spread, and transmission.[46] In public health, the term *contagious* refers to “a condition that is highly infectious,

usually severe" and transmitted by direct contact.[30] The concept of contagion has also been applied at a macro-level in the form of behavioural contagion[47-50] which refers to "an increased tendency for a behaviour to be performed when socially related persons have already performed it" (p.75).[47]. Indeed, Slutkin et al[51] note that "Just as nothing predicts a case of influenza as accurately as exposure to a prior active case of influenza, nothing predicts a violent act as accurately as a preceding violent act – committed against you, someone close to you, or to your group" (p.70). Central to Slutkin's approach to violence as a contagious disease is the need to address the social norms that normalize acts of violence within a society. In recognition of the role of beliefs and norms in sustaining such contagious behaviours the term *social contagion* has been adopted.[32]

However, the contagion perspective of behaviour has been heavily criticized within the field of Social Psychology, described as "an easy, off-the-shelf cliché".[52] First, Steve Reicher and Clifford Stott[53] argue that it does not acknowledge the fact that all who are exposed do not go onto to perform "copy-cat" behaviour. Indeed, there is evidence from longitudinal studies that indicates that not all individuals exposed to violence go on to perpetrate violence[54]: "The most typical outcome for individuals exposed to violence in their families of origin is to be nonviolent in their adult families" (p.870).[55] Similarly, however, not all who are exposed to the influenza bacillus (to use Slutkin's example) will become infected. Furthermore, John Drury[52] notes that the term "implies that the spread is uncritical, simple, non-cognitive, primitive – that anyone is susceptible…. a non-rational process, maybe a deeply irrational one". Indeed, the complex interaction of multiple factors that contribute to violence are highlighted in the socio-ecological model

proposed by the WHO.[14] Moreover, Fergus Neville (personal communication) notes that the use of the term "contagious" incorrectly implies some pre-cognitive origin of violence, which fails to fully account for the fact that violence may be socially-meaningful for those who perform such acts.[56, 57] Indeed, unlike the more passive role of a susceptible individual to the influenza virus (to use Slutkin's example again) an individual must still play an active role in performing violent acts (except perhaps in cases of severe mental disorders). Thus, viewing violence as a communicable disease *could* present limitations in terms of understanding the nature of the problem, and developing and implementing interventions to address the problem; however, further clarity is required on both sides of the argument.

Violence as a non-communicable disease/condition

Violence is openly referred to as a non-communicable condition by the World Health Organization.[58] Non-communicable disease is defined as "A descriptive term for common and important conditions of public health importance that are not caused by infectious pathogens"[30] and appears to serve as a somewhat "catch-all" term. Kirch [29] adds to the definition further by stating that they "usually derive from genetic predisposition and/or certain lifestyle characteristics" (p.993). [29] Moreover, non-communicable diseases result from preventable and modifiable past and cumulative risk factors, which are considered more complex than those of communicable diseases.[59]

The World Report identifies the myriad risk and protective factors for the three major types of violence (i.e. self-directed, interpersonal, and collective) and illustrates the complex interplay of these factors at the level of individual, relationship, community,

and society through the application of Bronfennbrenner's [60] ecological systems theory.[14] It could, therefore, be argued that violence acts in a similar manner to a non-communicable disease.

This perspective is supported by the similarities that violence shares with many other non-communicable conditions whose origins can be traced back to childhood.[61] The seminal work of Cathy Widom was fundamental in the development of the concept of the "cycle of violence" [62] which highlights the "intergenerational transmission of violence". Widom amongst others have found that young men and women exposed to violence (witnessing or experiencing) during childhood and adolescence were at *greater risk* of perpetrating violence in the future. Moreover, the Adverse Childhood Experiences study[63] has identified the increased risk of future violence, particularly intimate partner violence (interpersonal violence)[64] and self-abuse (self-directed violence)[65] associated with a variety of adverse experiences during childhood, including abuse, neglect, and household dysfunction.

The World Health Organization[66] acknowledged this issue in *Breaking the cycles of violence*, which explored the intergenerational transmission of violence as a means to prevent child maltreatment and other forms of violence. In particular, it provides a revised version of the cycle of violence that depicts a life-course approach to violence perpetration highlighting the different influences at various life stages in the developmental progression from childhood maltreatment to antisocial and violent behaviour. However, Heyman and Smith Slep[55] emphasise that "it is important to note that the cycle of violence is hardly a sealed fate" (, p.870). Nonetheless, this serves to

illustrate the impact of exposure to cumulative distal risk factors which can result in violence being triggered by a proximal situational factor, and how this can be perpetuated with each successive generation.

While this perspective could be seen as similar to the notion of contagion employed by Slutkin et al.[51] (i.e. prior exposure leading to future perpetration) it also acknowledges the whole host of risk and protective factors (beyond merely experiencing violent victimisation) that determine the expression of violence. For instance, exposure to violence does not lead immediately to the expression of violence but is one of many contributing factors that *may* lead susceptible individuals on a pathway toward violence.

Viewing violence as a non-communicable disease is also contentious. For instance, Last[30] notes that the adjective "non-communicable" may appear inappropriate when applied to certain conditions within this class of disease (e.g. cervical cancer, obesity, traffic-related *injury*, etc.). Similarly, McDavid et al.[31] note that:

> "while it [violence] is certainly non-communicable in the context of medicine and public health, the concepts of social contagion and the well-established intergenerational transfer of effects of trauma raises questions as to whether or not it is non-communicable in a social sense" (p.478)

Here McDavid et al. differentiate the medical/public health perspective and the social perspective of violence as non-communicable or communicable, respectively. Indeed, their assertion that violence is non-communicable from a medical/public health

perspective is in direct contradiction of the view espoused by Slutkin et al.[51] in which the medical/public health view of violence is communicable. It would appear that violence could be seen to comprise elements of both major disease models. Consequently, one has to question how violence should be viewed from a public health perspective.

Violence and injury

Classification is a fundamental process within public health. When considering the classification of violence, one cannot divorce the issue from that of its sibling, (unintentional) injury. In the past, injury has been attributed to "fate, chance or unexpectedness" (p.377) inferring an unfortunate and unavoidable set of events not amenable to prevention.[37] In fact, despite injury being among the oldest health problems encountered by humans, it has, until recently, been treated as a peripheral issue for public health[67]. Nowadays, following its elevation to a focal issue within public health[40] the terms (unintentional) injury and injury control are used to emphasize that such outcomes are indeed preventable. To the extent that violence prevention has been pursued it has often been covered by the same term (i.e. *intentional* injury). There are some advantages to this. Not least of which is the refocusing of attention from the presumed mental and moral state of the perpetrator onto underlying factors and the possibility of prevention. As recent events have illustrated (e.g. following mass shootings or terrorist attacks) such advantages tend to break down at times of great public trauma with a reversion to more reactionary thinking.

There are also some major disadvantages. Violence prevention lacks the discrete more readily evaluable interventions that have characterized progress in injury control (e.g. helmets, stair-gates, protective clothing, etc.). While there has been substantial progress in the evidence base for violence interventions,[68] the field tends to be seen, and perhaps sometimes sees itself, as lacking crucial compelling evidence on specific interventions. As a result it falls foul of the common evidence-based practice fallacy: lack of evidence proves lack of effect. All too often it is simply that the appropriate evaluation has not yet been done,[69] which is hardly surprising as many violence prevention initiatives are complex and driven by policy imperatives, where the political drive to do something over-rides the numerous voices calling for a measured evaluative approach.

Violence prevention

Perhaps we are, however, being premature in worrying how to classify violence. After all we still have to win wide-spread acceptance that it is a public health issue at all. Historically, violence has tended to be seen as the purview of criminal justice authorities rather than a legitimate focus for public health[70]. While criminal justice is familiar with the concept of "risk factors" or "root causes"[71] the very fact that legal sanction was historically seen not only as a remedy but also as providing preventive deterrence would be enough in and of itself to convince some that we are not dealing with a disease here but rather an unpleasant and unwanted social phenomena whose origins lie in moral inadequacy, greed, selfishness, or evil influences. However, involvement of legislation or legal process cannot be seen as a barrier to legitimate Public Health attention. After all, Gostin[72] notes that of the 10 public health

achievements of the 20th century, seven were realized through law reform or litigation (vaccinations, safer workplaces, safer and healthier foods, motor vehicle safety, control of infectious diseases, tobacco control, and fluoridation of drinking water).

It has been suggested that more can be achieved by regarding violence as a public health concern[14] not least through the provision of more effective ways of preventing violence, which could actually reduce the burden on the criminal justice system. According to Prothrow-Stith and Davis[73] the public health approach to violence prevention is conceptualised in three forms (p.331, italics from original):

1. Primary prevention. "Explicitly focuses on action *before* there are symptoms [risk factors for violence] and includes strategies every community and everyone needs."
2. Secondary prevention. "Relies on the presence of risk factors [for violence] to determine action, focusing on more immediate responses *after* symptoms or risks have appeared."
3. Tertiary prevention. "Focuses on *longer-term* responses to deal with the consequences of violence after it has occurred to reduce chances it will reoccur."

Using this framework, the aggressive, reactionary approaches that traditionally characterize the criminal justice response to a violent incident[71] are more in-keeping with tertiary prevention. In contrast, the focus of public health on primary (and secondary) prevention[74] offers a much greater chance of addressing violence.

Perhaps the truth is that we fear violence in the same way society has feared all poorly understood threats to health, particularly where a "remedy" is far from clear. For instance, in the past many diseases including leprosy and TB have been seen in such a way where fear of infection and ignorance of causation combined to fuel superstition. More recently the moral panic and outrageous discrimination that added to the burden of those living with HIV/AIDS has only begun to gradually subside as treatment became possible. Indeed, the causes and culprits of violence are cast in a similar light incorporating everyone and everything from a lack of moral and religious belief and education, through poor parenting and family breakdown, to the influences of the devil himself.

It is believed that much can be achieved through a collaborative effort between public health and criminal justice to address violence.[11, 75, 76] However, increasingly punitive sentences garner political popularity, despite lacking evidential support. Moreover, the popular press often describe perpetrators using emotive, even religious, discourse. Without widespread support for violence as a public health issue, all of these factors will continue to reinforce the aggressive, reactionary response to violence over the more enlightened approach that characterises public health.

The wider perspective

Some of the most vulnerable people in our societies languish in prisons, in morgues, or fear for their lives as they step outside their homes. Violence is very much an affliction of the socially deprived, with rates of perpetration and victimization at their highest across every society in the most deprived communities.[77] What is more, not only is

there a social gradient within and across societies - “the lower the ranking in society the higher the risk”(p.6)[78] - there is evidence to suggest that the more unequal the society, the greater the level of violence.[79]

Such inequalities relate to people’s unequal positions in society[80] and their inequitable access to geographic, economic, and cultural services.[81] This is the result of the way in which societal affairs are organized[82] and the wider socio-political conditions in which people live.[83] While social hierarchies are inevitable[82] the resultant inequalities in health are unjust[84] and avoidable[78]. Thus, adopting a wider, social determinants view of violence may actually address the structural issues that perpetuate the high levels of violence in the most deprived communities in developed and developing societies.

The 4th Public Health revolution

Whilst definitions of public health abound[30, 85, 86] what is common is “a sense of general public interest, a focus on the broader determinants of *health*, and a desire to improve the *health* of the entire population” (p.16, italics added).[18] *Health*, according to the WHO “is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (p.2).[87] While Morgan[88] has criticised this static, broad, idealised, and potentially unattainable goal, it does (for now) suggest that the scope of public health should be as broad as the definition of health specifies. Indeed, Detels[85] identifies the key contemporary concerns facing public health, including: ‘communicable diseases’, ‘chronic disease’, ‘mental illness’, and ‘population changes’, and offers ‘oral health’, ‘injuries’, ‘*homicide, violence and suicide*’, ‘vulnerable populations’, ‘the environment’, ‘air pollution’, ‘water pollution’, ‘other pollutants’,

‘rescuing the environment’, and ‘occupational health’ as *other* public health issues. While this list is vast it is increasingly acknowledged that public health should legitimately concern itself with issues that will likely impact on all forms of well-being. What is more, unlike many other discourses regarding the future of public health,[17, 18] it highlights the need to address the emerging burden of violence; however, it is still not seen as a “mainstream” concern.

Slutkin[46] notes that when it comes to violence we have made the wrong, moralistic diagnosis which can “lead to ineffective and even *counterproductive* treatments and control strategies” (p.95). It is acknowledged that public health policy and practice needs to change in order to address current and emerging health challenges[35, 89-91] “that are not amenable to current strategies despite our best efforts” (p.34).[91] In the context of public health improvement in the UK Hanlon and colleagues argue for a “fifth wave”;[90, 91] with reference to the *global* burden of violence we suggest that the answer may lie in a fourth public health revolution: a “change in scope” revolution. This would explicitly recognize that the causes of premature death and ill health now relate closely to issues of justice, economics, and globalization.[92] Violence fits with this definition, indeed it rather requires it, for it transcends classic distinctions between communicable and non-communicable diseases, distinguishes itself from its sibling discipline of injury control, and results from a complex array of proximal and distal determinants at multiple layers of influence.[93] What is more, viewing violence as endemic as opposed to epidemic means that policy and practice “may need to adapt to this altered situation” (p.627).[25] The recommendations made by Hanlon and colleagues are highly applicable

to the change of scope in the public health approach to violence prevention, and can serve to enable the global revolution in public health policy and practice.

However one chooses to classify or conceptualise the matter, it remains clear that violence poses a significant public health problem. It demands our urgent attention and will require the exercise of sustained political will at both a local and global level if we are to effectively address its wider causes. This does not, of course, detract from the need to develop and deploy evidence-based interventions. But it does argue that that alone may not be enough. The uniquely complex nature of violence as an issue that is part communicable and part non-communicable; structurally determined and yet amenable to intervention; a focus for health and yet a priority for criminal justice. Rather than be shackled by debates of definition or classification that risk becoming dogmatic, it is important that public health accepts the role it can and must play in preventing violence through unified action toward policy and practice.

As important as classification is to public health, what really matters in the endeavour to prevent violence is what works, and what works is just as dependent on what can be negotiated into place as on the generation of yet more evidence on incidence, causation, or effective intervention. It is high time to hold Governments, both national and regional, to account for their failure to effectively address violence. Perhaps only when elections are regularly won or lost on that basis will we know we are making progress.

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