Assault as a public health problem: discussion paper

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Summary

Formal collaboration between epidemiologists, A & E doctors, family practitioners, criminologists and the police is necessary so that criminal justice and public health approaches to the causes and prevention of interpersonal violence can be co-ordinated. Computerized record keeping in A & E departments, incorporating programmes dedicated to assaultive and accidental injury, is an important starting point and this needs to be organized in a systematic way so that comparisons with data collected by police and in national crime surveys can be made. Research is necessary to identify risk groups and to draw causal inferences. Criminal injury is an increasing cause of temporary and permanent handicap and death in many countries and it merits formal epidemiological research, funded by national and international health agencies. This should include the evaluation of primary and secondary prevention programmes in A & E departments and in the community. On the 10th anniversary of the publication of the Black report on inequalities in health, it is apposite to consider that high rates of intentional injury as well as illness are closely linked to poverty and that violence leaves permanent physical and psychological scars. A deprived young urban male may suffer 60 years of incapacity as a result of injury and subsequent further reductions in quality of life and self-esteem. In comparison with child abuse, the causes, identification, prevention and management of assault involving adults are not yet established as a community health issue. It is urgent to plan now to obtain the knowledge that can lead to future decreases in injury; a public health approach can make significant contributions in delineating aetiology, incidence and prevention strategies that are likely to be successful. It is surely better to reduce crime and violence through the positive aim of promoting health rather than through the negative aims of retribution, deterrence and incapacitation.

Differences between public health and criminal justice approaches to assault

Traditionally, violent behaviour has been treated as a problem for behavioural scientists such as criminologists, psychologists and sociologists and for practitioners such as police officers and lawyers. The past success of public health approaches in preventing disease suggests that injury brought about by assault might also be reduced by the application of public health methods. In view of recent re-appraisal of public health policy[1], the time is particularly ripe for this approach.

Public health emphasizes preventing the occurrence or recurrence of disease whereas criminal justice emphasizes retribution, deterrence, incapacitation and rehabilitation. Public health focuses on victims and consequences whereas criminal justice targets offenders, and is concerned with blame and with justice. Unlike public health, criminal justice treats attempted but unsuccessful assaults as similar in many respects to completed assaults. Conversely, unlike criminal justice, public health treats assaults as similar in some respects to traffic injuries. Public health aims to establish the prevalence and incidence of disease and to identify causes, risk groups in the population and risk factors (which can be causes or markers). Criminal justice is only concerned with injuries that fall within the legal classification of criminal violence, and criminal justice measures (with the possible exception of rehabilitative treatment) are rarely based on demonstrated causes or risk factors. Public health focuses not only on early identification but also on immediate situational influences such as alcohol and firearms. In the USA and UK, government has also been concerned with situational crime prevention in recent years, as interest in rehabilitation has decreased, but has shown little interest in early identification and social prevention.

Until recently, assault has not been treated as a public health problem, despite the fact that it is a major threat to health and a major cause of disparities in health between richer and poorer segments of the community. The number of potential years of life lost or handicapped as a result of assault need to be documented, so that injury can be compared in importance with other health hazards. If the World Health Organization's campaign for 'Health for All by the Year 2000' is to be achieved, assault must enter the public health arena. A new collaboration between criminologists and doctors could lead to new, possibly more successful, methods of reducing the troubling social problem of assault, not least in helping to identify victims who are afraid to complain about victimization (for example, battered women and rape victims). A public health approach would provide a perspective of the acknowledged substantial but unquantified 'dark figure' of unreported crime.

Measurement problems

Existing sources of information about the prevalence and incidence of violent crime, official criminal statistics[2] and crime surveys[3], have recognized shortcomings. In addition to their incompleteness (eg in undercounting domestic violence) they do not provide detailed information about characteristics of offenders

and victims or about the circumstances leading to violent acts. These problems could, to a large extent, be overcome if violence became established as a public health issue, particularly in relation to the majority of injuries, which are not fatal. Such research would help to identify environments, circumstances and communities where the incidence of violence is comparatively lower, or higher. A knowledge of the number of victims and assailants (prevalence) and of the numbers of intentional woundings and assaults, whether categorized as 'homicide' or 'other woundings' (incidence) in defined populations, should be the basis for preventive programmes. A further objective of a public health approach would be to identify reasons for these differentials at national, regional and local levels.

A third component of a public-health orientated strategy in relation to assault would be to formulate prevention programmes based on the results of epidemiological investigations. These might be community, school or media based, and would not be limited only to programmes operative in hospital trauma units or health clinics. The fourth aspect of the public-health approach would be objectively to evaluate the effectiveness of such programmes in community, hospital and health clinic settings. Data collected from these sources could reflect changing incidence and characteristics of injury quickly and accurately. Effective methods of prevention could then be formalized and developed in a form useful to policy-makers.

Assault has become the leading cause of death in some demographic and ethnic groups, for example in young black American males. For one in 21 black American males, the cause of death is homicide[4]. There are considerable but unknown numbers of people injured however. Intentional injury remains a problem mainly for young people. For example, the American National Crime Survey shows that one in 12 black males aged 16-19 years is a victim of violent crime each year[4]. A lifetime of suffering with after-effects is common, and early injuries cause much higher cost to victims and to services than if injuries occur later in life.

Many violent acts are not reported to the police in Britain and there are secular, district and regional variations in police recording practices. Furthermore, the police categorization of some violent offences is almost arbitrary, for example in the differentiation between wounding and common assault. There is some suggestion for example, that the UK police have, in recent years, become more likely to record an assault as an (indictable) wounding rather than as a (summary) common assault[5]. Thus, unreliability of police data is caused by wide variations in ascertainment of behaviour as criminal, either by victim, witnesses, or others and by wide variations in 'diagnostic' criteria. More objective information could be derived from health services. Such data could provide more detailed descriptions and causes of injuries[6,7] and identify discrepancies between hospital and police data[8].

Quantitative assessment of physical morbidity (rates, nature and duration) has largely been ignored in traumatology as well as in criminology, though qualitative assessment of this is an important part of Criminal Injury Compensation proceedings. The application of injury severity scoring methodology has much to offer, as in other aspects of traumatology. This would improve police practice, which roughly classifies assaults involving cuts or broken bones as wounding and those involving bruises as common assault.

Psychological morbidity, including post-traumatic stress disorder, is an important problem after assault. The rates, nature and duration of upset remain unclear however, particularly as most research has only been concerned with patients who present in psychiatric clinics and not consecutive trauma patients who attend A & E departments.

Although morbidity data concerning assault are scarce in many developing countries[9], estimations of the economic cost to American society, where injury of all causes is the single greatest cause of death of individuals aged 1-44 years, have been made[10]. In 1985, interpersonal violence caused 49 276 deaths (20.8/100 000 persons; 14% of all deaths were caused by injuries) and 261 738 hospital admissions (110.4/100 000 persons; 5% of all admissions were caused by injury) in the USA at an estimated total cost of US$8260 million. This includes expenditure for medical and non-medical care (home modification, vocational rehabilitation and insurance costs) and loss of earnings. The cost of disability was estimated as 41% of total cost. The costs to health services of violent crime is likely to be substantial in other Western countries, and the establishment of this problem as a public health issue would provide the means of creating a useful measure (economic cost) of the impact of violence on society.

Victim surveys tend to underestimate the true level of violence because of their high attrition rate, which is 40% for some segments of the population[3]. Unfortunately, it is those who are most at risk of violence, for example inner-city, poor, young, black males who are least likely to be included in victim surveys.

Accurate, hospital-derived morbidity data would also help to identify real trends in the incidence of assault. Police crime data are known to be inaccurate and misleading in this regard, because lack of evidence, the contributory role of victims and constantly changing police administrative practices mean that there is little consistency over time in recording methods. Furthermore, there are strong incentives for the police to record more crime. The media tend to sensationalize violence and the public may be increasingly more ready to regard aggressive or violent behaviour as criminal. Police crime data in many European and North American countries suggest steadily increasing incidence of violence. However, rates of increase in police statistics are substantially greater than those suggested by crime surveys, which themselves undercount both domestic and street violence because householders do not report these to doorstep interviewers[3]. For example, in England and Wales between 1981 and 1987, the number of woundings increased by 40% according to police statistics (from 98 021 to 137 135) and by 12% according to the British Crime Survey (from 507 000 to 566 000)[11]. Trans-national objective methods of classifying and analysing violent crime are also necessary. This could be part of a public health approach, particularly in Europe, and could be a World Health Organization task.

The probability of a crime being recorded and of an offender being caught and convicted could be calculated accurately by comparing A & E department and

police records. In what appears to be the only such comparison which has yet been made, in Bristol, it was found that only 23% of victims of assault treated in hospital had been recorded by the police as 'woundings'[6]. In relation to injury which occurred in public places, assaults on women were more likely to be recorded than assaults on men, but patients who sustained injury in the street, in discotheques and on Saturdays were less likely to be recorded than those injured in other locations and on other days.

Identification of risk groups

A public health approach could establish the risk of assault in terms of social and material deprivation and other demographic parameters. Risks have begun to be defined for particular communities and nationally, but, given the shortcomings of existing methods of data-collection, prediction is, as yet, inexact. The risk of injury in different age-groups is well established. The fear of crime by the elderly is often more debilitating than injury itself, although past research indicates that this fear is largely unjustified[12,13].

Although it has been established that people over 50 years are at lower risk of assault than younger adults, even when spare-time activity is taken into account, the risks associated with specific types of spare-time activity have received less attention. Medical sources of information could identify relative risks in these areas, particularly as injury is often sustained in places of recreation[3,7]. A public health approach could also yield the risks of severe, disfiguring and psychologically disturbing injury and of psychiatric sequelae in witnesses of violent crime and uninjured victims.

Alcohol is an important risk factor for interpersonal violence. Social psychologists and anthropologists explain the role of alcohol in terms of expectations of what alcohol will do. Research in these disciplines suggests that if an individual believes that alcohol will make him more aggressive or assertive, then this will be the effect. The different effects of alcohol in different cultures is explained in this way[14]. Dose-response and case-control studies have largely yet to be done in humans, however. Investigations of the effects on risk of injury in an assault of alcohol and other drugs could be carried out in A & E departments by epidemiologists, trauma surgeons and clinical pharmacologists and toxicologists, for example using breath analysers, urinalysis or hair sampling and questionnaires to determine alcohol and other drug dependence. High levels of alcohol consumption by victims of assault have been demonstrated[15], and a recent case-control study has begun to define risk in terms of binge drinking[16].

In the past, it has been suggested that anxiolytic and sedative drugs reduce the chances of aggression and that it is only stimulants, such as amphetamines, which are likely to cause violence. However, recent work has also suggested ways in which anxiolytic drugs, such as diazepam, might make violence or aggression more likely. These drugs facilitate violence by removing anxiety about how the other person might react and about the long-term consequences of violence in relation to possible arrest and punishment.

There is some evidence that violent people may have a paranoid and impulsive personality more often than others and that perception of an increasing gulf between rich and poor is a stimulus to anger and aggression. Environmental determinants of violent behaviour include overcrowding and exposure to media violence. One of the principal difficulties in establishing causal links in relation to these factors has been the inadequacy of information about the true incidence of violence.

Prospective longitudinal studies of violent offenders show that, as children, they tended to have been aggressive and impulsive, that they tended to have low intelligence, and that they tended to come from families with disharmonious parents, poor supervision, harsh and erratic discipline, and convicted parents[17]. These factors might be used in early identification of risk groups. The advantage of focusing on risk groups is that scarce prevention resources might be targeted more efficiently. However the disadvantage is that some children might be stigmatized by early identification. In order to minimize the possibility of stigmatization, it might be better to target prevention efforts on communities at risk rather than on individuals at risk.

Primary and secondary prevention

Primary prevention, focused on the prevention of initial injury or participation in aggressive behaviour, needs to be separated from secondary prevention aimed at preventing escalation or progression of violence and subsequent involvement in violence. This distinction is often not clear cut since, for example, underlying antisocial behaviour patterns may have been present for years before violence occurs. In this context, what may be planned as primary prevention may in fact cause regression or modification of anti-social tendencies ('established early disease'). Treatment aimed at fostering the desistance from violence could be referred to as tertiary prevention.

Primary prevention might include increasing the minimum purchasing age for alcohol to 21 years in countries where this has not already been done, legislation and codes of practice relating to firearms, knives and glasses might be developed, and bar-staff might be trained to limit alcohol consumption by any individual to eight units (the consumption level in excess of which injury in assault becomes much more likely)[16]. Clarke has emphasized the importance of situational crime prevention, targeted on circumstances and environments which are known to predispose to violence[18]. Some of the immediate precipitating causes of inner-city violence are seen in youths' accounts of what happened[19].

Secondary prevention of assault has largely yet to be developed. In stark contrast to child abuse, almost no steps have been taken to target high risk adults. In some cases, such as street fights between drunken youths, it may be a matter of chance who is the victim and who is the offender, or all parties may be both victims and offenders. Few or no strategies have been developed to check the welfare of the children of adult victims of violence who attend A & E departments, even though up to a half of injured 'housewives' have children who are on child protection registers[20]. Secondary programmes might also help to prevent accidents, and suicide attempts, to which some victims of assault seem particularly prone[21]. A strategy of early prevention might also be adopted. For example, because future offenders can now be identified at an early age their offending might be prevented by pre-school intellectual enrichment programmes and parent training[22].

Programme implementation and evaluation

Large-scale community-wide prevention programmes in the United States show that it is possible to reduce risk factors for heart disease such as cigarette smoking and to promote protective factors such as exercise and healthy eating. For example, the Minnesota Heart Health Programme aimed to change peer group norms, provide alternative healthy role models, foster social skills to resist peer pressures to engage in smoking, and provide health-enhancing alternative activities[23]. The programme relied on same-age peer leaders elected by their classmates and trained by community staff as the major vehicle for transmitting new information and skills within the classroom setting. Investigations of programmes to prevent alcohol dependence suggest that led, peer-group discussion among at-risk teenagers may be the most effective way of intervening. In relation to assault, subjects for discussion might include the concept of responsible drinking and the importance of the whole, unscarred face in attracting partners and gaining acceptance in society at large. It is not clear whether at-risk individuals realize that violence really does leave permanent physical and psychological scars or whether they assume that the handicap is as temporary as it often appears in media fiction.

Methods of investigation and programme implementation should also include those which have proved effective in epidemics. Thus, the causes of injury might be seen in terms of vectors, hosts and the environment as in the classic investigation of the causes of cholera by John Snow. The way in which violent behaviour is transmitted (or not transmitted) in families, between young males, geographically and in ethnic minority groups might be clarified and effective intervention or isolation achieved. Vulnerable individuals might be identified. Clearly, such research will also involve collaboration with social services, the police and other criminal justice agencies. This approach will necessitate the use of qualitative methods of research as well as surveys.

Time series analysis, which has been used to explore and explain the relationship between variables in many settings, may also be a useful public health tool in relation to assault. Income, savings, inflation rates, employment status, expenditure, alcohol consumption, truancy, time spent in various spare-time activities, weather and intentional and accidental injury rates could be investigated concurrently over time. By this means, multiple outcomes of intervention could be monitored as well as aetiological factors. Educational and reforming measures could be initiated in A & E departments by doctors, psychiatric nurses, alcohol advisory centres and possibly the police and be developed in the community, so that all the necessary surgical, mental health and social services are freely available. Strategies for prevention and the management of both assailants and victims could be based on those which have already been developed to deal with child abuse. Hospital and family practice based prevention programmes might be developed outside the criminal justice system altogether and might even become facilities to which the criminal justice system might refer some offenders.

Multiple risk factor intervention trials might be a means of implementing prevention of interpersonal violence though such trials will need to take account of problems identified in the past. For example, in relation to heart disease, high-risk individuals in non-intervention groups have altered their behaviour simply through knowledge of the importance of various risk factors; knowledge imparted by researchers and patients' doctors. Nevertheless, a great deal can be achieved in such large-scale experimental trials, whether targeted on high-risk individuals or whole communities[24].

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