Diabetes Prevention and Intervention:
Conflict between Public Health and Individual Autonomy

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Diabetes mellitus (DM) is a disorder of metabolism, characterised by chronic hyperglycemia and is accompanied by disturbances of intermediary metabolism. It is caused by defects of insulin secretion, insulin action or a combination of both[1]. DM may be broadly divided into Type 1 DM (T1DM), Type 2 DM (T2DM), Gestational DM and other, rarer forms such as monogenetic forms caused by defects in the insulin receptor or downstream signalling pathways. T1DM is caused primarily by pancreatic β cell destruction, commonly as a result of autoimmunity. The mechanisms underlying T2DM are not clear, however the most definitive causative factors of the disease are obesity and physical inactivity, both of which have been shown to increase insulin resistance, a characteristic feature of T2DM. It has been estimated that there are approximately 366 million people with DM globally, and this figure is expected to rise to 552 million by 2030[3].

Implications of the disease for the individual and the state

Burden on the individual

Although the various forms of DM vary hugely in their aetiologies, incidences and indeed clinical presentations (particularly those of T1DM in comparison to T2DM), the long-term effects of poorly controlled disease are similar. Both may lead to a variety of serious clinical sequelae including retinopathy, nephropathy, neuropathy and arterial disease which may in turn may result in blindness, severe renal disease, disabilities and amputations. Furthermore, a diagnosis of DM also has significant psychological implications, with DM patients having twice the risk of developing depression than that of the normal population[4], as well as having higher incidences of anxiety[5], eating disorders[6] and general psychological distress[7].

Costs to the State

Apart from having devastating implications for the individual, DM also places a significant burden on the State. In 2011, it was estimated that there were 191,000 diabetics in Ireland, of whom 14,000 had T1DM[8]. Data from the VHI Healthcare screening[9] suggests that there are an additional 30,000 undiagnosed Type 2 diabetics and a further 146,000 with pre-diabetes in the community.

How do these figures translate into costs to the State? The CODEIRE study which followed health budget spending on the treatment of T2DM for a twelve month period (1999-2000) revealed that approximately 6.4 % of the total healthcare budget was spent on the treatment of diagnosed and undiagnosed Type 2 DM, where 49% of the total 580.2 million euro was spent on hospitalisations, 27% on ambulatory care and 25% on drugs[10]. The diabetic population has grown by 105,000 since the year 2000 (figures by WHO[11]), representing a 122% rise in incidence, and an undoubtedly greater increase in costs to the State.

There is a significant body of evidence to suggest that T2DM is manageable and even reversible with simple weight loss and exercise, and both hepatic and muscular insulin resistance have been shown to improve with even a short period of calorie restriction[12] or acute exercise[13]. Meanwhile, the complications described above can be delayed and even avoided with tight glycaemic control[14].

Both diabetic micro- and macrovascular disease have significant negative impact on health-related quality of life[15], and are a significant cause of disability[16] and cost to the State[17]. Thus, it would seem that public health interventions and preventative measures targeting these areas would be relatively uncomplicated, and that their implementation would be ethically straightforward because of the expected benefits; however, this is not the case.

Public Health Ethics

In contrast to the primary fiduciary duty of the doctor to an individual patient, the ethics of public health is based on a societal responsibility to protect and promote the health of the community as a whole. However, because of its community-orientated position, public health measures may ignore certain ethical principles. Any potential interference by these measures with human behaviour, such as encouraging behavioural changes by seeking to address weight issues and physical inactivity often gives rise to significant conflict with the principle of autonomy, which is paramount in health care provision.

Autonomy, Paternalism and Public Health

Among the public health interventions (PHIs) suggested for the prevention and treatment of diabetes are taxes, excises and advertising bans on fatty foods, tax breaks for those maintaining a healthy BMI, prohibitions (such as on transfats), mandatory screening and restrictive employment policies. Almost all of these interventions can be seen as a restriction of and indeed an assault on individual autonomy. Autonomy, which is described as self-rule, free from the control of external influences; as well as respect for autonomy, run deeply in common morality. Kant described respect for autonomy as arising out of the conclusion that all individuals have inherent unconditional worth. Respect for autonomy creates both positive and negative obligations. In the case of some PHIs, the negative obligation, which refers to the obligation not to interfere with an individual's autonomous choice, is not fulfilled, which results in the possibility of these interventions being described as paternalistic.

Paternalism, defined by Dworkin as "interference with a person's liberty of action justified by reason referring exclusively to the welfare of the person being coerced"[18], was completely prohibited by JS Mill[19], and in recent times has become a focus of much criticism amongst patient groups and others, particularly as the responsibility for decision making in care has shifted to a greater extent towards the patient. The principle of PHIs would seem to be in direct conflict with that of the patient-physician partnership, which has become the ideal relationship in the delivery of healthcare in recent years.

The Argument for PHIs

However, there exist a number of arguments against the view that PHIs are unethical or paternalistic. Some have argued that PHIs are not paternalistic nor in conflict with personal autonomy, as there is tacit prior consent by anyone who is a member of society to some degree of interference for the good of the community. Others, on the other hand, have accepted that PHIs impinge on autonomy, but argue that it is justified in some cases. Childress et al20 formulated a number of criteria under which PHIs, and thus restriction of autonomy, were justified. The five criteria they identified were effectiveness, proportionality, necessity, least infringement, and public justification. The notion of public justification for a PHI where individuals have a role in deciding if the intervention is justified implies that each individual's views are considered and thus the action is not wholly paternalistic. Another view justifies PHIs on the presumption that the rational individual would consent after the treatment proves to be beneficial, and that unhealthy behaviours are so contrary to one's self-interest that they must be driven by irrational or pathological factors. This view has been termed soft paternalism and heavily criticised on the basis that various individuals will place different values on different things. Thus in the context of PHIs for diabetes prevention, a person may value goals other than healthy eating or physical fitness. Consent should never be assumed on the basis of what someone should or ought to value.

Policy makers and government, rather than defending their policies, have taken a utilitarian view on public health, concluding that the most ethically reasonable course of action is the one that produces the greatest good for the greatest number of people. Furthermore, it has been argued that respect for autonomy in the area of public health could constitute a moral neglect on the part of the community. Many would argue that it is unfair to burden those who have made prudent choices with regard to their health with taxes and other measures in order to cater for those who have not. This is in accordance with the principle of justice based on moral desert, which is founded on the belief that all should receive what they deserve, where one's desert may be welcome, such as a reward, or unwelcome, such as a punishment. It must be noted that society as a whole bears responsibility for the pattern of distribution of unhealthy behaviours amongst its members, as demonstrated by Marmot and Wilkinson in their research on the extensive linkage between health status and social position, who consistently showed that lower social status was strongly associated with poorer health[21,22,23]. Much of what makes a person is dependent on the community in which he or she was raised, thus it would be morally unacceptable for the same community to relinquish all responsibilities for an individual's subsequent disabilities.

Public health and the law

The complex moral arguments surrounding this conflict have given rise to legal precedents; one of the better known ones, the case of Jacobson v. The State of Massachusetts in 1903, justified State intrusion on personal autonomy where there is compelling interest[24]. Apart from directing attention to what defines such an interest, the Jacobson case also highlighted issues pertaining to control of infectious diseases, specifically the legality of a government fine on those who failed to obtain vaccination for their children. Thus the use of this precedent fails to take into account the profound difference between controlling disease agents and controlling human behaviour. Exercising interventions to control diseases are often justified, but actions aimed at controlling people are often not. The main causes of mortality and morbidity are moving away from acute and infectious diseases towards more chronic ones, many of which arise from lifestyle factors, the so-called 'epidemiological shift'[25], which has resulted in this deficit becoming increasingly significant.

The arguments against PHIs

Although there are many arguments in favour of PHIs, empirical evidence showing otherwise must also be considered. Trinity's own Petr Skrabanek raised the point that many PHIs are of dubious benefit and may even cause harm even though they are well intentioned[26]. Skrabanek likened PHIs to mass experimentation, highlighting the paradox that while clinical trials are subject to such an intense level of ethical regulations, State bodies have little or no obligation to inform or gain consent from participants, i.e. the community, for their part in "experimentation of uncertain outcome and potential harm". Thus, as well as impinging on autonomy, PHIs could also inadvertently come into conflict with the principles of beneficence and non-maleficence. A number of common screening programmes have provided empirical evidence to support this view. A study on the efficacy of mammography screening estimated that less than 5% of women with screen-detectable cancer had their lives saved by screening[27]. In addition, a review of 2 large randomised controlled trials, a quasi-randomised trial, a large cohort study and several case-control studies on breast self-examination in Canada have shown no benefit, and indeed lead to disadvantages in the form of increased visits to the doctors and benign biopsies[28]. Screening, particularly in healthy populations, has been shown to have negative psychological effects, where in comparison with unscreened controls, screened patients' own assessment of their psychological distress was profoundly increased after three months[29].

Conclusion

It cannot be denied that those who experience the greatest degree of autonomy enjoy the best health, while those with the least have the poorest. Autonomy is a defining constituent of the human being, and perhaps, rather than attempting to restrict it through PHIs, it should instead be promoted through education and patient empowerment. The autonomy that should be sought is that of Kant, where autonomy is integrated with responsibility, allowing the individual to be in the position of deciding and not being decided for, and thus being able to select and accept reasonable constraints on their behaviour.

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