Social Science & Medicine xxx (2014) 1–8

Contents lists available at ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

Assessing the overuse of medicines

Joan Busfield

University of Essex, Dept of Sociology, Wivenhoe Park, Colchester, CO4 3SQ, United Kingdom

ARTICLE INFO

Article history:
Available online xxx

Keywords:
Overuse of medicines
Rational use of medicines
Pharmaceuticalisation
Pharmaceutical marketing
Doctors' risk avoidance
Antibiotics
Antidepressants
Antihypertensives

ABSTRACT

The use of medicines has increased markedly in many countries over recent years, providing clear evidence of the increasing 'pharmacaeuticalisation' of society. This paper contributes to the sociological analysis of pharmaceuticalisation by starting to explore how we can begin to make judgements as to when and to what extent some medicines are being overused – an important aspect that, rather surprisingly, has not so far been the focus of attention those analysing the process. It considers the World Health Organisation's criteria for the 'rational' use of medicines, pointing to some of the issues they raise. It then develops a typology of over and underuse derived from these criteria. This provides a framework for the discussion of assessing overuse that focuses in particular on the widespread and increasing use of medicines that are not very effective for the conditions for which they are prescribed, and their use where the issue of clinical need is in doubt. Some of the factors that encourage overuse are also considered.

The growth in the use of medicines in many countries over recent years is now well-recognised and has been seen as clear evidence of pharmaceuticalisation: 'the process by which social, behavioural or bodily conditions are treated or deemed to be in need of treatment, with medical drugs by doctors or patients' (Abraham, 2010:604; see also Williams et al., 2009; Bell and Figert, 2012). It is also generally accepted that some medicines are used too extensively (WHO, 2011b), something that increases health service costs and can have negative consequences for individuals because of the side-effects they experience, and for the wider society. The best-known example of overuse is antibiotics, where the widespread use in humans and animals has led to the increasing resistance of infectious microorganisms to many antibiotics, and hence to their increased ineffectiveness (WHO, 2011b). It is primarily this growing resistance, which threatens society's capacity to deal with bacterial infections, that has led to the judgement that antibiotics are overused, although the resistance does not in itself indicate anything about how the overuse can be measured, its extent, or its causes. Yet, notwithstanding its importance, the issue of overuse has not so far been the focus of attention of those analysing pharmaceuticalisation who have concentrated on other features (Williams et al., 2009), and the factors underpinning its occurrence (Abraham, 2010; Bell and Figert, 2012). This paper seeks to contribute to the debates on pharmaceuticalisation by first considering some of the available data on medicine use, and then focussing on how we can begin to make judgements as to when and to what extent medicines are being overused and to identify some of the factors underpinning overuse. Such evaluations are essential if we are to determine the extent to which, and the areas in which, pharmaceuticalisation may have proceeded too far. To explore the issue of overuse further the paper starts by providing some data on the increasing use of medicines and then, drawing on WHO discussions of rational use, constructs a typology of appropriate use. This then forms the basis for an examination, which draws on a number of examples, of the grounds for claims of overuse, considering some of the reasons for it, including clinicians' (often doctors) practices and procedures, changing conceptions of illness, clinical guidelines on treatment, and the pharmaceutical industry's activities.

1. Methods

The study draws on a range of documentary sources (Scott, 2006). One important source is the official statistics collected by global and national bodies, such as the World Health Organisation (WHO), the British National Health Service (NHS) and US government agencies. These statistics provide data on various aspects of medicine use. Second, policy documents produced by such organisations are an important source of ideas and concepts. In particular the study draws on the WHO's reports on the rational use of medicines. Finally, the study builds on the findings of numerous research studies, both quantitative and qualitative, by medical researchers and social scientists.

E-mail address: busfj@essex.ac.uk.

http://dx.doi.org/10.1016/j.socscimed.2014.10.061
0277-9536/

2. The expansion in medicine use

The evidence of the expansion of medicine use in most countries is clear-cut. In England the most comprehensive data come from NHS statistics on prescribing in the community. The data in Fig. 1 show that in England in 1989 the average number of prescriptions dispensed per person was 8.0 and had increased to 18.7 by 2012.

The data also show that it took twenty years from 1989 to 2008 for the number of prescriptions dispensed to double from 8.0 per person to 16.3. This is a shorter time than the earlier doubling from the 1975 level of 6.2 per person, which only reached 12.4 in 2002, a period of 27 years, indicating that the pace of growth has increased. Moreover the rise since 1989 occurred well after the introduction of some of the major new drugs of the twentieth century: antibiotics, antihistamines, and 'minor tranquillisers' such as Librium and Valium, whose use spread rapidly; hence the increase cannot be put down to these developments in pharmaceutical technology.

The picture in other countries is not dissimilar. The WHO (2011a) noted that the consumption of medicines had grown over the previous ten years in all the groups of countries categorised by income and, as we would expect, there had been a higher percentage growth in low-income than high-income countries, though in absolute terms the growth was greater in the latter. Interestingly in the US there was a recent dip in per capita usage, almost certainly as a result of the 2008 financial crisis, which has had more impact on US than European medicine use, since many Americans, even when insured, have to pay a higher proportion of the cost of medicines (IMS 2013). However, over the longer term US medicine use has expanded very significantly and the country has the highest per capita expenditure on medicines in the world (WHO, 2011a). Obtaining a prescription typically requires access to a medical practitioner and in many countries there has also been an increase in the number of doctors per capita (World Bank, 2014) and in the range of medical activities (Conrad, 2007).

In seeking to examine the grounds for judging whether particular medicines are overused it is important to note that medicines are now prescribed for two distinct purposes. First, to treat existing sickness – sickness that commonly leads the individual to feel unwell and be unable to carry on with their usual activities to the full. Here subjective well-being and social functioning are key lay markers of illness, although clinicians usually base their diagnoses not only on such reports but also on other data, mostly related to biological processes, like temperature, pulse rate, heartbeat, blood pressure, and sometimes specific tests, for instance for the presence of certain microorganisms, or a biopsy. If illness is identified, the clinician also makes a decision on treatment in the light of their assessment, with the prescribing of some medicine a frequent outcome. While the treatments for some conditions may restore the individual to health (though often only speeding up recovery), quite often they do not, and the illness becomes chronic and long-term medication is recommended to try to ameliorate some of the symptoms and/or to prevent further deterioration.

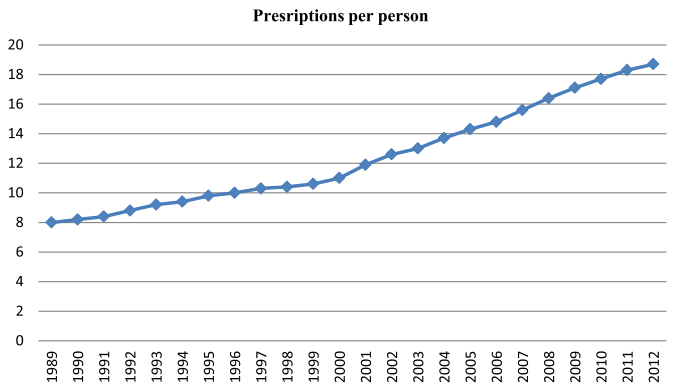

Fig. 1. Prescriptions dispensed, England, 1989–2012. Source: Department of Health; Health and Social Care Information Centre (1999–2013) Prescriptions Dispensed in the Community: England.

There is, however, a second and increasingly common reason why medicines are prescribed: this is for preventive purposes – to reduce the risk of future illness (Greene, 2007). Here an assessment is made that there is a risk of an illness occurring, and a medicine is used to reduce that risk, even though the individual does not feel ill and can carry out their usual tasks. Historically vaccinations and inoculations have been the most important preventive treatments, but nowadays probably the best-known example is the prescribing of cholesterol-lowering statins to try to reduce the risk of heart attacks and strokes. The decision to treat is based on observed levels of bodily processes, now termed 'biomarkers', such as cholesterol and blood pressure, with thresholds set for levels judged outside the desirable range. This generates what Greene (2007) calls 'prescribing by numbers' since prescribing depends on the application of numerical thresholds. One feature of using medicines for this purpose is that the underlying assessment is based on epidemiological data of risks across populations or groups with given characteristics. As a result medicine use by large groups of people is often recommended, even if the level of risk is relatively small. As Dumit put it: 'Risk equals illness equals treatment' (2012:114). Further, use may be recommended for long periods of time, also increasing overall use. In this process biomarker levels outside the range judged normal are in turn treated as almost having the status of quasi-diseases, sometimes termed prediseases (Viera, 2011). Hence certain blood pressure levels become pre-hypertension, while certain blood glucose levels become prediabetes, both held to require treatment. Biomarker levels may also become surrogates for illness when measuring a drug's efficacy, even though there is considerable debate about the value of testing drugs against surrogate outcomes (Institute of Medicine, 2010). The growing use of medicines to reduce risk has also helped to change notions of illness and disease by extending them beyond conditions generating symptoms, to the asymptomatic, invisible bodily states defined by numerical thresholds. It has also been a major factor in the overall expansion in medicine use (Greene, 2007; Dumit, 2012) that is indicative of pharmaceuticalisation.

To what extent is the increasing use of medicines justified, and to what extent does it represent overuse? This requires consideration of how to assess overuse.

3. The World Health Organisation and the rational use of medicines

The need to identify the over and underuse of medicines is recognised by the WHO which talks of 'rational use'. The following definition of rational use, intended to have global relevance, was put forward at a WHO conference:

> Patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community (WHO, 1985).

This definition has a number of interesting features: first, the use of the term 'rational'; second the reference to 'clinical needs'; third, the language is of 'receiving' medicines, suggesting that the medicines are prescribed; and fourth, issues of dosage and time period are included. Rational use is about receiving medicines that

Please cite this article in press as: Busfield, J., Assessing the overuse of medicines, Social Science & Medicine (2014), http://dx.doi.org/10.1016/j.socscimed.2014.10.061