



Disease Mongering and the Disorientation of Science. Is it Possible that the Scientific Method is Being Diverted to Commercial Ends?

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Abstract: Disease mongering is the process, supported by marketing and healthcare communication campaigns, through which minor ailments, mild disorders, or normal physiological conditions are transformed—for commercial purposes—into actual pathologies. The goal is to artificially and commercially convert healthy people into sick individuals, into patients who "consume" drugs and diagnostic tests. This conversion occurs by lowering clinical parameters or even inventing "false diseases." The process tends to increase medicalization, drug consumption, and the number of therapeutic interventions. The question we ask is this: can this commercial approach significantly disorient science and divert the scientific method primarily toward market interests? To answer our question, we initiated a literature search, using biomedical databases, analyzing the most relevant articles on the topic, and reflecting on the most interesting and significant data. The results of our research clearly demonstrate how disease mongering shapes the very concept and definition of disease, as well as how it influences the production of scientific evidence, medical communication, healthcare training, and the public perception of health. In conclusion, based on the study conducted and the scientific articles reviewed, we believe that the scientific method, if bent to commercial interests, risks losing its epistemic function. In particular, we also believe that disease mongering poses a concrete risk to the integrity of science and public health. In our medical view, we believe it is unscientific to artificially and consumeristically transform healthy people into sick people; therefore, we advocate for serious and determined multidisciplinary countermeasures.

Keywords: Disease mongering, medicalization, scientific method, pharmaceutical industry, overdiagnosis.

INTRODUCTION

Disease mongering is an economic phenomenon aimed at the commodification of diseases by expanding diagnostic limits, transforming mild conditions and minor ailments into pathologies requiring therapeutic treatment. Authoritative authors state: "There's a lot of money to be made from telling healthy people they're sick. Some forms of medicalising ordinary life may now be better described as disease mongering: widening the boundaries of treatable illness in order to expand markets for those who sell and deliver treatments" [1]. Other authoritative authors state that we must fight against disease mongering: "In summary, combating disease mongering may improve the personal health of individuals, as well as the financial health of public (and private) insurers". [2]. One authoritative author

even asks the question: “Does the pharmaceutical industry manufacture diseases as well as drugs?” [3]. This phenomenon has been documented in various fields of contemporary medicine. Psychiatry: “Disease mongering starts at the top of recent accusations being hurled at psychiatry. It is used to refer to the attempts by pharmaceutical companies or others who have similar interests, to enlarge the market for a treatment by convincing people that they are sick and need medical intervention” [4]. Andrology: “The commercial promotion of testosterone efficiency syndrome and its remedies has exploited cultural stereotypes of aging and sexuality through awareness campaigns promoted by the laboratories involved and has been disseminated by media with the participation of numerous experts and with the support of scientific associations, representing a paradigmatic case of disease mongering” [5]. Infectious diseases: “The astonishing publicity over the threat of influenza has been generated partly by those, such as the pharmaceutical industry and influenza researchers, who benefit from the increased expenditures the publicity provokes. It is, in effect, disease mongering, the promotion of disease or dread of disease for one's own gain” [6]. Aesthetic medicine: “Fairness cream manufacturers have exploited the preference for fair skin, portrayed it as a necessary prerequisite for success, and promoted the use of their product to achieve the ideal. Fairness creams may satisfy many of the criteria of disease mongering” [7]. Gynecology: “The creation and promotion of “female sexual dysfunction” (FSD) is a textbook case of disease mongering by the pharmaceutical industry and by other agents of medicalization, such as health and science journalists, healthcare professionals, public relations and advertising firms, contract research organizations, and others in the 'medicalization industry” [8]. The literature clearly shows that disease mongering is not an isolated phenomenon at all, but a systemic and intertwined process involving multiple sectors: the pharmaceutical industry, media and health communication, healthcare institutions, healthcare professionals, patients, medical and social culture [1]. The question that guides our study is the following: can disease mongering disorient science and divert the scientific method towards commercial purposes?

METHODS

To answer our question, we conducted a literature search using biomedical databases, PubMed, and Google Scholar. Using this method, we explored the international scientific literature and then analyzed articles relevant to our study. We have already contributed to this purpose by publishing several papers in the recent time [9, 10, 11, 12, 13].

RESULTS

To make the results of our bibliographic research transparent, we believe it is appropriate to precisely report, in quotation marks, short but significant passages taken from the original articles. We have also done so in the introduction since we believe that the orderly and coherent presentation of selected passages, taken from the original articles, in addition to promoting transparency, also avoids the slightest error due to a possible subjective reinterpretation on our part. To begin with, we believe it is important to highlight what is happening with regard to nosography and the expansion of disease definitions as healthy people are classified as sick: “Expanding disease definitions are causing more and more previously healthy people to be labelled as diseased, contributing to the problem of

overdiagnosis and related overtreatment. Often the specialist guideline panels which expand definitions have close links to industry and do not investigate the harms of defining more people as sick" [14]. Convincing healthy people that they are sick and manipulating numbers in order to boost the drug market is part of the objectives of disease mongering: "Convincing healthy people that they are sick and require medicines can enormously expand the market. Disease mongering can turn ordinary ailments like baldness into medical problems, consider risk factors such as hypertension and osteoporosis as diseases and frame prevalence estimates to increase potential markets" [15]. All of this can represent a threat to health: "Expanding definitions of disease are causing too many people to be diagnosed and treated unnecessarily, producing harm and waste, posing a major threat to human health and the sustainability of health systems, and creating growing conflict within medicine" [14]. Below are some extremely important data and information for the purposes of our study.

Pre-osteoporosis. In an authoritative article, Pablo Alonso-Coello et al. clearly report: "Osteoporosis is a controversial condition. An informal global alliance of drug companies, doctors, and sponsored advocacy groups portray and promote osteoporosis as a silent but deadly epidemic bringing misery to tens of millions of postmenopausal women.¹ For others, less entwined with the drug industry, that promotion represents a classic case of disease mongering—a risk factor has been transformed into a medical disease in order to sell tests and drugs to relatively healthy women"[16]. Still regarding osteoporosis, what is reported in an authoritative article by Wright is significant: "Osteoporosis is often described as a disease, yet the symptoms are imperceptible and reliable diagnostic criteria have not been formulated. It is probably better described as a potential risk factor in patients with underlying illness. However, the marketing of osteoporosis has created the impression that all women (and many men) are at risk of suffering fragile bones, hip fracture and death. Large sums of money have been spent on raising awareness, diagnosing and treating osteoporosis, yet its link to hip fracture is not strong and the drug therapies used may be of little benefit or cause actual harm" [17].

Superficial venous thrombosis. In an authoritative article by Frappé et al. a checklist is proposed: "The checklist offers a useful support to guide our questioning about the potential for disease mongering when studying the field of SVT. The main elements pointing towards disease mongering are in relation to definition and promotion, whereas management seems rather spared" [18].

Hypertension. In an authoritative article by Reddy it is stated: "This phenomenon—termed "disease mongering"—was mostly confined to the field of psychiatry, but over the past three decades, we have seen it enter nearly every field of medicine" [19]; then in the article we read "for example, recent adjustments in hypertension criteria lowered the threshold for systolic blood pressure from >140/90 to >130/90 (Ioannidis, 2018). Though the shift appears small, it has resulted in millions of new hypertension diagnoses, prompting more aggressive prescribing of anti-hypertensives and reshaping clinical practice (Sekkarie and Loustalot, 2024)" [19]. Ioannidis, Sekkarie [20, 21].

Alzheimer's disease. In Reddy's authoritative article, cited previously, we read: "Drug manufacturers are now proposing to diagnose individuals with "Stage 1" Alzheimer's based on biomarker positivity alone, even when no cognitive symptoms are present (Petersen, 2024). In short, these companies are attempting to diagnose Alzheimer's disease in patients who don't have memory problems" [19]. Petersen [22]. At this point it seems very interesting to us to report, in detail, the following passage from Reddy's authoritative article: "This phenomenon isn't just isolated to neurological diseases. In oncology, liquid biopsies, which detect circulating tumor DNA, may expand cancer definitions to preclinical stages that might never progress to symptomatic disease

(Ignatiadis et al., 2021). In psychiatry, blood tests for inflammation markers linked to depression could pathologize normal emotional responses (Strawbridge et al., 2017). Even in conditions like diabetes, advanced biomarkers for insulin resistance might classify individuals without symptoms as pre-diabetic, pushing them toward the use of expensive GLP-1 agonists (Cronjé et al., 2023)” [19]. Ignatiadis et al., Strawbridge et al., Cronjé et al. [23, 24, 25]. Oncology. An extremely interesting statement is reported in an editorial by Yadava: "Unfortunately, even those who feel hale and hearty in their own personal perception are declared sick based on the various examinations and screenings that we routinely perform. A dozen of such scenarios are encountered in our daily practice. Even if malignant, in the classic 'barnyard analogy', it has been clearly demonstrated that most malignancies picked by screening tests are not likely to manifest in an individual's expected life span, and those that are rapidly progressive and mortality generating in any case manifest much before the preventive checks" [26]. We report what we read in the authoritative article by Moynihan et al. already cited. Baldness: "The medicalization of baldness clearly shows the transformation of the ordinary processes of life into medical phenomena" [1]. Irritable bowel syndrome: "Without question many people with the condition are severely disabled by their symptoms, but the arrival of new drugs has seen manufacturers seek to change the way the world thinks about irritable bowel syndrome. What for many people is a mild functional disorder—requiring little more than reassurance about its benign natural course—is currently being reframed as a serious disease attracting a label and a drug, with all the associated harms and costs" [1]. Social phobia: "Pharmaceutical Marketing's practical guide singled out the promotion of social phobia as a positive example of drug marketers shaping medical and public opinion about a disease" [1]. Hypertension, hypercholesterolemia and osteoporosis: "Like high blood pressure or raised cholesterol levels, the medicalization of reduced bone mass—which occurs as people age—is an example of a risk factor being conceptualized as a disease" [1]. Metabolic syndrome and cholesterol. In the authoritative article by Wolinsky, already cited, we read: " The situation is reminiscent of the attitude towards cholesterol. Twenty years ago, physicians were not concerned about the effects it might have on heart disease. Today, thanks to efforts by pharmaceutical companies, high cholesterol levels are now recognized as a major health problem. Pharmaceutical Executive noted: "The emergence of cholesterol reduction as a market was a major event for pharma. Metabolic syndrome promises to be as big or bigger" (Breitstein, 2004) » [27]. Unhappiness, osteoporosis, stomach pain, boredom, osteoporosis, irritable bowel syndrome, attention deficit disorder, hypercholesterolemia, hypertension, shyness: "Critics such as Payer and Caplan maintain that the routine human condition—unhappiness, bone thinning, stomach aches and boredom—is increasingly being re-defined as disease: depression in its milder forms, osteoporosis, irritable bowel syndrome and attention deficit disorder. Likewise, risks factors, such as high cholesterol and high blood pressure, are declared diseases in their own right—hyper-cholesterolaemia and hypertension—with falling thresholds resulting in more people considered to be sick. In other cases, drugs approved for devastating illnesses, such as clinical depression, are indicated for milder conditions, such as shyness, which is now dubbed 'social phobia'" [3].

DISCUSSION

Based on the results of our bibliographic research, and on the excerpts from authoritative articles that we have placed in quotation marks for transparency, we believe we can make

a calm yet determined argument. Furthermore, we believe we can clearly state: disease mongering can disorient science and divert the scientific method towards commercial ends. Certainly, by analyzing scientific articles, we believe that some excerpts are extremely useful for broadening scientific awareness, as well as medical knowledge. For example, we consider the following excerpt, taken from the authoritative article by Moynihan et al., to be extremely significant and interesting: “A lot of money can be made from healthy people who believe they are sick. Pharmaceutical companies sponsor diseases and promote them to prescribers and consumers”[1]. This excerpt, together with the other excerpts selected and faithfully reported in the “results” section, represents a stimulus for further discussion on the transformation of healthy people into sick people, that is, into patients who consume drugs and therapeutic interventions. It's all too clear that overdiagnosis leads to overtreatment, and overtreatment leads to unnecessary exposure to the risk of side effects. In addition to potential physical harm, healthy people labeled as sick can experience anxiety and psychological dependence on doctors and medications. Disease mongering, understood as the forced and commercialized medicalization of everyday life, in our opinion, disorients science and professional ethics, and biases the scientific method toward commercial gains, data manipulation, and objectives that fall outside the Hippocratic mentality. In this regard, we believe that intelligent and ethically sound countermeasures are important.

CONCLUSIONS

Our study shows that disease mongering, understood as the commercial medicalization of everyday life, poses a concrete risk to the integrity of science. If the scientific method is bent to commercial interests and oriented toward the manipulation of numbers and data, it can lose its critical function and become a mere tool for expanding the healthcare market. Intelligent and ethically grounded countermeasures are needed, including critical medical education, regulation of healthcare communication, maximum transparency during clinical trials, ethical oversight, and public health literacy. Science, which benefits from financial funding but does not submit to it, must preserve its autonomy to avoid becoming solely a commercial product.

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