

Labelling people as 'High Risk': A tyranny of eminence?

Teppo L N Järvinen

Whenever a doctor cannot do good, he must be kept from doing harm.

Hippocrates

Nowadays, being at 'high risk' of having a disease has become a disease in and of itself. Sweeping educational programmes at all levels of healthcare now turn an otherwise healthy person's 'high' blood pressure, elevated serum lipids or low bone density into chronic conditions having increased risk of a potentially bad event.¹ But what represents 'high risk'? This question lies at the heart of modern medicine, particularly with respect to pharmacological primary prevention.

Advocates of this evolution argue simply that primary prevention saves lives. However, permissive labelling of conditions as diseases may not be entirely harmless. On an individual patient level, possible disadvantages include making relatively healthy individuals perceive themselves as 'sick', and almost every treatment has inherent risks.² On a societal level, we probably all still remember the discouraging effect of the new European guidelines on cardiovascular disease classified most adult Norwegians—among the healthiest populations in the world—to be at 'high risk' of cardiovascular disease.³ If these guidelines were applied to the Norwegian healthcare system, the focus on hypertension would drain the entire primary healthcare budget.

'HIGH RISK': HOW LOW CAN WE GO?

Current debate on 'High Risk as a Disease' twirls around the 'appropriate' threshold for defining something as a disease. The recently introduced osteoporosis guideline put out by medical experts of the National Osteoporosis Foundation (NOF, USA) recommends osteoporosis medications if a person's 10-year probability of sustaining a hip fracture is 3% or over. Applying these NOF recommendations to a large prospective cohort study, at least 72% of Caucasian women >65 years of age and 93% of those >75 years of age, in the USA, would be recommended for drug

therapy.⁴ The new cholesterol guideline similarly colonises virtually the entire elderly population into the realm of 'sick'.

UNDERSTANDING RISK: ARE THE BLIND LEADING THE BLIND?

But who are the right people to determine the threshold for 'high risk'? Advocates of the hegemony of medical experts argue that doctors—as content experts—should define diseases.⁵ If we assume doctors are truly more competent in making value judgements about the lives of their patients than the patients sitting in front of them, should we not have proof that doctors can do the job? Sadly, despite medical education and clinical experience, doctors do not seem to possess the required skill.⁶

Even more discouragingly, patients might not fully agree with our perceptions. For example, the above noted NOF threshold is more than 15 times *lower* than what patients would consider a 10-year fracture risk justifying initiation of bone-targeted pharmacotherapy (50%).⁷

Similarly, there is a huge gap on what the two stakeholders consider 'effective treatment'. Patients generally expect >20% *absolute* risk reduction (in heart attacks) for preventive pharmacotherapy to opt for treatment.⁸ In contrast, doctors world-wide began prescribing enthusiastically when an

osteoporosis drug was shown to increase the probability of avoiding a hip fracture from 97.9% to 98.9%. Indeed, this 1% *absolute* risk advantage convinced our peers; mind you, after being framed as a 50% *relative* risk reduction.

DOES THE HIPPOCRATIC OATH OBLIGE US TO INTERVENE?

One may wonder why we still intervene when not only our patients disagree with our views on what constitutes a plausible risk to be treated or an effective treatment but also when the preventive efforts are 10 times more resource consuming than the treatment for the event to be prevented? Most doctors argue that, in matters of life and death, we have no other option. However, in other disciplines affecting the health and well-being of humans, we easily make decisions based on cost. For example, teachers in primary school are well aware of the fact that there are numerous children in each class with learning disabilities who might come from troubled families and who would be naturally at 'high risk' of becoming illiterate. But does the increased risk of consequent social deprivation drive us to fund and execute large-scale special needs teaching for all 'at-risk kids'?

TREATING 'HIGH RISK'—A MOCKERY OF SHARED DECISION-MAKING?

Let us get back to the pivotal question: Is treating 'High Risk' a viable concept? A strategy of obtaining a single estimate of a patient's risk and reducing this risk effectively is appealing. However, evidence from behavioural sciences suggests that we are

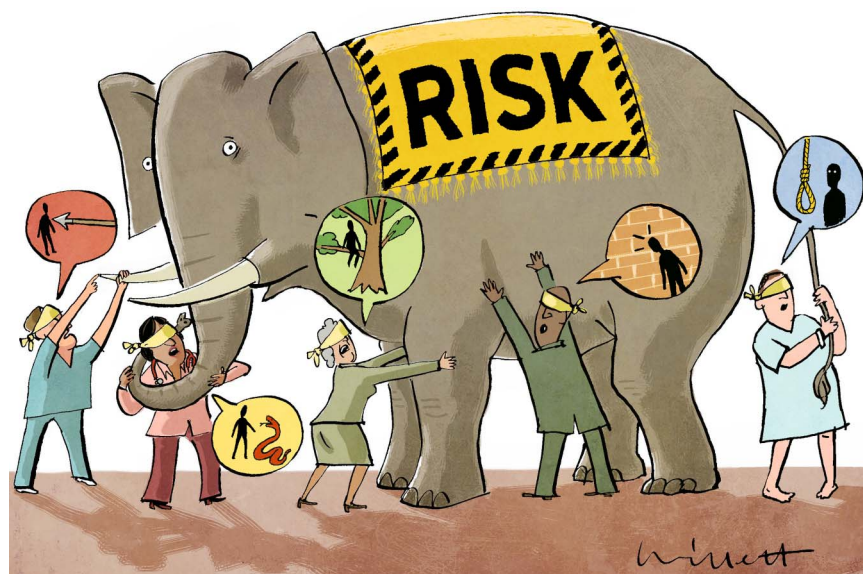


Figure 1 Risk is the probability that something bad or unpleasant will happen. Intuitively, it seems like a very simple concept. However, there is strong evidence that both doctors' and patients' comprehension of RISK is poor.

Correspondence to Professor Teppo LN Järvinen, Clinical Medicine/Department of Orthopaedics and Traumatology, University of Helsinki and Helsinki University Central Hospital, Töölö Hospital/Topeliuksenkatu 5, Helsinki 00014, Finland; teppo.jarvinen@helsinki.fi

generally poor in making probability decisions.⁹ And, despite laudable efforts to improve the communication and comprehension of both the concept of risk and the anticipated treatment benefit, risk-illiteracy of the gravest magnitude still affects both doctors and patients (figure 1).⁶ But without accurate and *common* comprehension of these key aspects, there is no basis for shared decisions.¹⁰ And without shared decision-making, pharmacological primary prevention becomes a tyranny of eminence.

Acknowledgements Alan Cassels helped by adding comments and additional arguments and with the editing.

Competing interests None declared.

Provenance and peer review Not commissioned; externally peer reviewed.



OPEN ACCESS



Open Access This is an Open Access article distributed in accordance with the terms of the Creative Commons Attribution (CC BY 4.0) license, which permits others to distribute, remix, adapt and build upon this work, for commercial use, provided the original work is properly cited. See: <http://creativecommons.org/licenses/by/4.0/>



CrossMark

To cite Järvinen TLN. *Br J Sports Med* 2016;**50**:77–78.

Accepted 1 September 2015

Br J Sports Med 2016;**50**:77–78.
doi:10.1136/bjsports-2015-095286

REFERENCES

- 1 Moynihan R. Surrogates under scrutiny: fallible correlations, fatal consequences. *BMJ* 2011;343:d5160.
- 2 Tikkinen KA, Leinonen JS, Guyatt GH, *et al.* What is a disease? Perspectives of the public, health professionals and legislators. *BMJ Open* 2012;2:pii: e001632.
- 3 Getz L, Sigurdsson JA, Hetlevik I, *et al.* Estimating the high risk group for cardiovascular disease in the Norwegian HUNT 2 population according to the 2003 European guidelines: modelling study. *BMJ* 2005;331:551.

- 4 Donaldson MG, Cawthon PM, Lui LY, *et al.* Estimates of the proportion of older white women who would be recommended for pharmacologic treatment by the new U.S. National Osteoporosis Foundation Guidelines. *J Bone Miner Res* 2009;24: 675–80.
- 5 Moynihan R. Medicalization. A new deal on disease definition. *BMJ* 2011;342:d2548.
- 6 Martyn C. Risky business: doctors' understanding of statistics. *BMJ* 2014;349:g5619.
- 7 Douglas F, Petrie KJ, Cundy T, *et al.* Differing perceptions of intervention thresholds for fracture risk: a survey of patients and doctors. *Osteoporosis Int* 2012;23:2135–40.
- 8 Trewby PN, Reddy AV, Trewby CS, *et al.* Are preventive drugs preventive enough? A study of patients' expectation of benefit from preventive drugs. *Clin Med* 2002;2:527–33.
- 9 Kahneman D, Tversky A. Prospect theory—analysis of decision under risk. *Econometrica* 1979;47: 263–91.
- 10 Hoffmann TC, Montori VM, Del Mar C. The connection between evidence-based medicine and shared decision making. *JAMA* 2014;312:1295–6.

Being at “high risk” of ill health has become a disease in its own right

Doctors as ‘risk-illiterate’ as patients; this undermines preventive medicine efforts

Classifying an individual as being at “high risk” of developing a particular condition/disease has become a disease in its own right, and is turning the healthy into the sick, argues an expert in an editorial published online in the ***British Journal of Sports Medicine***.

And doctors are as bad as patients at understanding what is meant by high risk and the anticipated benefit of any preventive treatment, says Professor Teppo Järvinen, of the Department of Orthopaedics and Trauma, Helsinki University Hospital, in Finland.

This ‘risk-illiteracy’ undermines preventive medicine and the ability of patients to take charge of their own health, he suggests.

Professor Järvinen gives several examples of the way in which the concept of high risk has skewed the perception of ill health.

Around 10 years ago, the threshold for treatment of high blood pressure in the European guidelines on cardiovascular disease classified most adult Norwegians—among the healthiest populations in the world—as being at high risk.

If these guidelines had been put into practice, “the focus on hypertension would have drained the entire primary healthcare budget,” points out Professor Järvinen.

Similarly, the recent US National Osteoporosis Foundation guidance on the threshold for the treatment of brittle bone disease, stipulates that treatment should be offered to all those whose 10 year probability of sustaining a hip fracture is 3%.

On this basis, he argues, almost three out of four white women over the age of 65 in the US and over 90% of those over the age of 75 would be recommended drug treatment.

And it doesn't stop there. “The new cholesterol guideline similarly colonises virtually the entire elderly population in the realm of the ‘sick’,” he points out.

But faith in doctors to work out who most needs treatment might be misplaced, he suggests.

“If we assume doctors are truly more competent in making value judgments about the lives of their patients than the patients sitting in front of them, should we not have proof that doctors can do the job?” he asks.

“Sadly despite medical education and clinical experience, doctors do not seem to possess the required skill,” he writes.

Furthermore, there's a mismatch in perception of the trigger threshold for treatment, he says. Patients tend to think that to qualify for preventive treatment the reduction in absolute risk needs to be large—in the region of 20%-50%.

But doctors “began prescribing enthusiastically when an osteoporosis drug was shown to increase the probability of avoiding a hip fracture from 97.9% to 98.9%,” he says, possibly because it was framed as a 50% reduction in relative risk to make the benefit seem more impressive.

And sometimes the effort required for prevention consumes vastly more resource than the treatment of the condition it is designed to stave off, he says.

“Despite laudable efforts to improve the communication and comprehension of both the concept of risk and the anticipated treatment benefit, risk-illiteracy of the gravest magnitude still affects both doctors and patients,” he writes.

“But without accurate and common comprehension of these key aspects, there is no basis for shared decisions. And without shared decision-making, pharmacological primary intervention becomes a tyranny of eminence,” he concludes.