



Obesity, Chronic Disease Risk Factors & Fighting Words – The Collateral Damage to Health

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Mini Review

Obesity, cancer and heart disease are associated with multiple risk factors [1-8]. According to the World Health Organization, obesity is a risk factor for development of many non-communicable diseases, including cancers and heart disease [2]. Risk factors are often addressed with actions of fighting, combating, conquering and waging war against epidemics [2-9]. The extent of military metaphors within medical and health contexts may vary depending on geographical, historical, and personal orientation toward health; these metaphors tend to *work well* with risk factors because they reinforce concepts of control and individual responsibility, two fulcra of health promotion and disease prevention.

Slobod and Fuks [10] state the “military metaphor is conceptually weak and often fails to provide a meaningful or useful description of the patient’s reality”. A similar statement could describe the role of risk factors in shaping a patient’s reality in addressing disease. Risk factors *work well* in terms of epidemiological frameworks and planning strategies for a medical assault, but they are less powerful when removed from the military metaphor perspective. Identify the enemy, plan an attack, carry out the plan and defeat the enemy; however, when planning an attack based on risk factor reconnaissance it is important to recognize “risk factors should not be confused with the outcomes” [11]. In other words, while risk factors, such as smoking, diet and certain laboratory values “provide some probabilistic information”, diseases are “far from perfectly predicted from known risk factors” [11]. This is an important consideration because as large-scale epidemiological studies identify risk factors at the population level, individual application of remedies, or a plan of attack to address risk does not guarantee, nor support, a successful outcome. When an individual engages in such battles, and after fighting the disease loses the war, what is the message? She/he fought hard, but not hard enough – “often, physicians add insult to injury by making patients responsible when treatments fail” [10]. The transfer of responsibility for failure is not necessarily an explicit process, but can become implicit in the words propagated by the medical regiment.

In reference to cardiovascular risk, “[a]lthough much improved, control of risk factors other than LDL cholesterol currently remains inadequate due to shortfalls in compliance with guidelines and poor patient adherence” [7]. The previous quote suggests shared responsibility of both the physician and patient; poor patient adherence and poor physician compliance with current guidelines are referred to as contributing to *residual risk* of “unwanted events” stemming from chronic disease, even after improving risk factors [7].

Additionally, it is reported “effective interventions involving intensive investment of time and resources by health professionals [to improve patient adherence], tend to be cost-prohibitive, and become progressively less effective over time” [7]. These findings are consistent with a 1963 report on risk factors and heart disease; “there is no good evidence that the control of cholesterol alone will lessen the risk of coronary heart disease” [12]. With “little success in taking the weight off [of] patients” and “dietary and chemical means . . . not prov[ing] easy or even regularly successful”, the authors concluded “more research into seats and causes . . . is required”, and while the “epidemiological approach can provide clues . . . it alone is unlikely to provide the final answer” [12].

Remembering risk factors are associated with unwanted outcomes and do not necessarily indicate the presence nor guarantee development of a disease in individuals, even if “the majority of such people may not suffer the expected consequence of ‘having’ a particular ‘risk factor’, once the risk factor has been identified, it is then reified into something real – part of the person’s constitution” [13]. In some circumstances it may seem as if risk factors are being treated rather than patients and their diseases; the practice of medicine moves “increasingly further from its roots in the care of patients – true ‘patient-centered’ care” [14]. Hyper-homocysteine as a risk factor for stroke may serve as an example. Starfield et al. [14] asked “is intervention to reduce the blood level of a known ‘risk factor’ (eg homocysteine) really prevention when it does not reduce the occurrence of the disease or improve overall health? Should controlling risk factors replace the conventional focus on controlling disease, even if it does not necessarily improve health?” How long should a risk factor remain a risk factor despite conclusive evidence it causes disease?

Perhaps in part, some risk factors remain engrained in the medical community due to magnification of non-significant findings and trends. Regardless of participants’ homocysteine levels, the HOPE 2 trial investigated the effects of a homocysteine lowering therapy compared to a placebo [15]. Despite finding there “were no statistically significant differences among subgroups examined with regards to the effect treatment on stroke risk”, Saposnik et al. [15] stated “we observed a *possibly* (italics added) larger treatment benefit for patients aged younger than 69 years . . .”. When further discussing their results, the authors stated the homocysteine lowering therapy “reduced the risk of stroke by 25%” [15], but what does this mean in terms of preventing a primary outcome? Of the 258 patients who had a stroke, 111 were in the homocysteine lowering group and 147 were in the placebo group [15]. Approximately 25% fewer patients in the

homocysteine lowering group (mean baseline/post-trial plasma homocysteine levels of 11.5 & 9.3 micromoles, respectively) had a stroke when compared to patients in a group consuming a placebo (mean baseline/post-trial plasma homocysteine levels of 11.5 & 12.3 micromoles, respectively) [15]. In other words, the group being treated with a homocysteine lowering therapy accounted for approximately 43% of strokes experienced by participants, while the group being treated with a *placebo* accounted for approximately 57% of strokes. Among other studies referenced, Aetna health insurance company included findings from the HOPE 2 trial in its Clinical Policy Bulletin outlining evidence considering homocysteine testing as “experimental and investigational because [the] clinical value has not been established” and therefore may not cover the cost of testing in relation to “assessment of cardiovascular disease or stroke risk” [16,17].

Following the military metaphor, in order to address “the current oppressive increase in cardiovascular risk” there is a call for new “campaigns” that are “forged with even greater vigor and resolve to combat obesity and other risk factors” [7]. Being a “product of culture, hamstrung by misbeliefs, intractable behavior patterns, and environments that have not responded to modification thus far” obesity reversal is not currently on many “best buy” lists of cost-effective approaches [7]. There are options available to correct behavior; “subsidies, taxation, environmental restructuring, and resetting default health options to a positive position” are suggested as options for promoting national behavior change toward obesity reversal [7]. This process fits well with the military metaphor and is line with concepts and practices associated with residual risk and primordial prevention. The latter relates to efforts to “prevent the onset and development of risk factors at early and middle ages by means of appropriate public health strategies” [18]. These efforts are not without challenge as they involve “engaging in a battle against strong industrial sectors; but it is possible with sufficient political courage and citizen support” [18]. Using risk factors as the foundation for reprogramming a nation toward *healthy* behaviors in a way places people “under the control of authority and turned into objects to be classified, measured, screened, and separated into ‘normals’ and ‘abnormals’, or ‘deviants’” [13]. This process has the propensity to lead to prognosis without sufficient diagnosis; “[o]besity is a chronic health problem with multiple etiologies and serious complications associated with it although the diagnosis at times is clear just by looking at the patient” [19].

What *collateral damage* could be associated with the standardized usage of fighting words in a *battle* for health? “People’s trust in the health system plays a role in explaining one’s access to and utilization of medical care, adherence to medications, continuity of care, and even self-reported health status” [20]. Trust may “be influenced by professional norms and power dynamics between nurses, doctors, and others in a healthcare organization and may shape attitudes and practices toward patients” [20]. When obesity and other chronic diseases are labeled as epidemics and lifestyles are reduced to risk factors we must *combat*, it is important to thoughtfully and reflectively consider the repercussions of such wars on people by means of disease wars. While military metaphors and risk factors may *work well* from a

medical perspective, this view of health promotion and disease prevention could lead to mistrust of health professionals, internalized blame, stereotyping large groups of people and ultimately impede adoption of healthful behaviors.

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