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A reflexão sobre integridade científica tem nos últimos dez anos, se tornado reflexo da aguda preocupação da sociedade com a credibilidade da ciência e com sua responsabilidade de prestar contas aos cidadãos sobre os resultados, a eficácia e os financiamentos relacionados aos seus experimentos. No Brasil, nota-se um crescimento dessa preocupação, que, de algum modo, se reflete nos altos insumos que pesquisadores e instituições de pesquisa recebem, geralmente da iniciativa privada e de fontes estrangeiras, para realizar pesquisas nos diversos setores do conhecimento, sobretudo, relacionados às indústrias farmacêuticas. Para basear filosoficamente a investigação utilizamos a Teoria do Reconhecimento de Axel Honneth, segundo a qual os indivíduos se tornam sujeitos de direitos quando, em uma sociedade, são reconhecidos como cidadãos responsáveis pelo funcionamento de suas instituições. Sendo assim, a ciência praticada com verbas públicas, ou mesmo financiada pela iniciativa privada e por entidades internacionais, tem o dever moral de reconhecer o cidadão como motor de seus processos e fim de suas atividades. É importante definir a Teoria do Reconhecimento como um instrumento útil na leitura dos conflitos de interesses (COIs), mas também como elemento fundamental que permitiu passar da investigação dos debates sobre COIs para uma perspectiva de teor analítico, capaz de apontar, concretamente, para questões sérias sobre a integridade da pesquisa científica e suas soluções possíveis. Os objetivos deste Simpósio foram: Estimular a formação e o debate em saúde pública e ética aplicada com foco em integridade científica; Fomentar discussões e trocas de experiências sobre a natureza e condições de implantação de políticas institucionais voltadas para a preservação e promoção dos valores da integridade da pesquisa científica; Investigar o impacto da discussão sobre COIs nas Ciências da Saúde com foco nos impasses éticos estabelecidos entre o conhecimento científico e a sociedade; Discutir estratégias de manejo de COIs em Saúde que permeiam as pesquisas científicas no Brasil, e confrontá-las com exemplos de outros países; Discutir formas de garantia de acesso aos estudos clínicos no país, estudos básicos (doenças negligenciadas) e liberdade de escolha e maior participação nas políticas que afetam a pesquisa científica, e Discutir a ética e a governança de Biobancos humanos e bases de dados genéticos.

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Public health and conflict of interest

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1. Starting Point.

I would like to start this lecture with Atul Gawande, one of the most important Public Health thinkers. Gawande points out that in the last few years we have come to realize that we are experiencing the deepest crisis in the history of medicine, due to something you don't normally think about when you're a doctor -something concerned with how much good you do for people, which is the cost of health care. There's not a country in the world that now is not asking whether we can afford the work that doctors do. The political fighting that we've created centres on whether it is the government or insurance companies that are the problem. The answer to this is both yes and no.

This Gawande topic points out the importance of Public health ethics that includes a systematic process to clarify, select and justify possible options of public health action based on values and beliefs of stakeholders and other participants.

Since public health activities take a population-based approach, targeting communities or populations, the intervention is often complex, involving multiple risk factors, stakeholders, and different perspectives on how to prevent or ameliorate health concerns and promote well-being.

Because of that, over and above a variety of scientific tools, (such as behavioural tools and those related to social science and communication science), for public health decision making (and action) another critical tool is needed: one related to public health ethics. Public health ethics brings such considerations as principles and values to discussions of public health policies and actions.

Because public health actions are often undertaken by governments and are directed at the population, the principles and values which guide public health can differ from those which guide actions related to individual clinical medical problems, which are more patient or individual-centred.

In applying a deliberation model inspired by Diego Gracia *(Diego Gracia.2003)*,a public health ethics inquiry performs three core functions :

1) Identifying the ethical problem;
2) Analysing alternative courses of action;
3) Solving the dilemma by deciding which course of action best incorporates and balances the guiding principles and values.

The aim of Public Health Ethics is to build a public health ethics infrastructure, including fostering an environment and culture that supports and develops ethical practices, raising staff awareness of public health ethics, and providing tools for analysing ethical issues.

Public health as an organized discipline began more than 100 years ago, with the goal of improving primarily the health of populations rather than that of individuals. Given its population- based focus, however, public health continually faces dilemmas, and public-health decisions commonly involve conflicting and ambiguous ethical principles. Public health raises a number of ethical problems that extend beyond the earlier boundaries of

bioethics and require their own form of analysis. Medical ethics, focusing on doctor/patient relationship, is widely discussed and taught to medical students. But a comparable field of public health ethics is not so well developed and fails to guide public-health practitioners (Robert and Reich, 2002). However, as the field of public health becomes more prominent, we are witnessing a radical change in the attention paid by Bioethics to distinctive problems inherent to public health, because the good of the individual, and not that of the population, was formerly the dominant theme (Callahan, 2002).

The World Health Organization definition of public health (WHO, 1952) was strongly criticized for its narrowness of target and as a consequence, other definitions emerged, such as "the science and art of preventing disease, prolonging life and promoting health through the organized efforts of society" (Acheson 1988). With this new perspective, Public Health is distinguished for being population based; emphasizing collective responsibility for health, its protection and disease prevention (Fincham, 2011); recognizing the state's key role; and emphasizing partnerships with all those who contribute to the population's health. (FPH, 2006).

There are several reasons for considering that individuals should be able to make their own choices in health care; furthermore, it is suggested that they should have control over resources in order to make these choices, rather than having them taxed by { government (Rice, 2001). In this context, the desire to improve the entire population's health is connected with governmental ideologies and political options (Beaglehole, 2004). As a result, one of the main problems of Public Health is the necessity to resolve tensions between public and private interests.

2. Public Health policy and individual interest

The concept of public health is linked to the meaning of "collectivity", suggesting the need for cooperative behaviour and relationships built on overlapping values and trust. At the same time, the goal of ensuring the conditions in which people can be healthy suggests a far-reaching agenda for public health that focuses attention not only on the medical needs of individuals, but also on fundamental social conditions that affect population levels of morbidity and mortality. From an ethical point of view, public health activities are generally understood to be teleological (end-oriented) and consequentialist - the public's health is the primary [end] goal and outcome that are sought in terms of measuring success (Childress, 2002).

In relation to the growth of the field of public health ethics, significant time has been devoted to identifying a sound ethical justification for paternalistic interventions (that override individual autonomy) to prevent people from adopting unhealthy behaviours (Buchanan, 1998). Paternalism consists of an external and unwanted interference in the decision-making autonomy of individuals on the grounds that doing so will make them better off or prevent harm coming to them. Recent studies have concretized and strengthened the central motivation for libertarian paternalism. When consumers make suboptimal choices, it is tempting to attribute their mistakes to personal characteristics (they were unmotivated, incapable or irrational) rather than to characteristics of the decision task (Jones and Nisbett 1971). That is, even when people are motivated to make personally and socially desirable choices, external constraints in the decision process or aspects of the decision task can prevent them from choosing optimally. Consumer science researchers have focused on understanding decision-making processes

but have paid relatively little attention to how they could extend their findings and methods to help individual consumers make better decisions.

The term libertarian paternalism first appeared in a 2003 article in the American Economic Review (Sunstein and Thaler 2003). At face value it might resemble an oxymoron – after all, a libertarian policy should be concerned with freedom of choice, and a paternalistic view appears to conflict with that. The authors have tried to prove that this is not the case – their aim is to help people make better and healthier decisions, but without restricting people's freedom in any way. Therefore, the concept of "libertarian paternalism" occupies the space between required policy regulations and voluntary individual choices by urging or restricting choices for the individual's welfare. Individuals may not always make decisions that are in their own best interest; hence, policy-makers make assumptions to design interventions that promote favourable and sustainable options.

2.1. The identified individual victim effect

The complexity of Public Health asks for the help of global research and, in this context, the psychology of populations is essential to attain an inclusive interpretation. I've chosen a particular psychological theory that demonstrates how difficult the approach might be, and how often the strategy may be wrong. Psychological theories and data confirm what keen observers of human behaviour have long known (Paul Slovic, 2015). Statistical representations of human lives do not necessarily do justice to the importance of those lives. All too often the numbers represent dry statistics, "human beings with the tears dried off," which lack feeling and fail to motivate action.

When it comes to prompting compassion, the identified individual, with a face and a name, is unique.

Psychological experiments demonstrate this clearly, but we all know this as well from personal experience and media coverage of heroic efforts to save individual lives. But the face need not even be human to motivate powerful intervention.

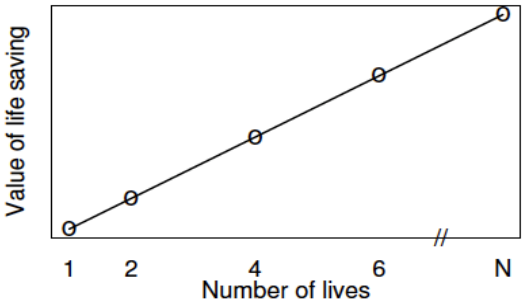

Figure 2: A normative model for valuing the saving of human lives. Every human life is of equal value.

Reproduced from: Slovic, P. (2007). "Psychic numbing and genocide". *Judgment and Decision* Making, Vol. 2, No. 2.

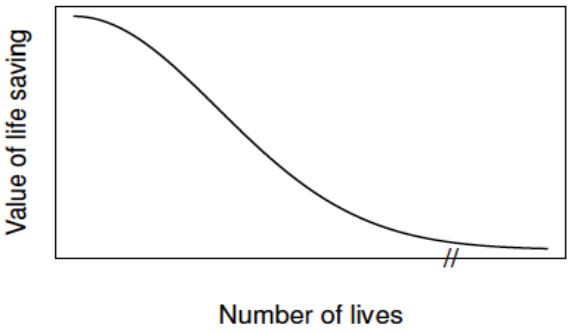

Figure 11: A model depicting psychic numbing — the collapse of compassion — when valuing the saving of lives.

Reproduced from: Slovic, P. (2007). "Psychic numbing and genocide". *Judgment and Decision* Making, Vol. 2, No. 2.

The consequences of the identified individual victim effect is connected with the impact of identifying the single individual in relation to the impact of identifying a group of individuals. Indeed, research currently underway suggests that the interaction between the victim's singularity and the availably of information occurs only for in-group victims, but not for out-group ones (Tehila Kogut and Ilana Ritov 2005).

3. Public health specificity of scientific integrity

After what has just been said, we are now in a position to understand that, for public health research specificity, maintaining high criteria of scientific integrity is essential to biomedical and public health research. But what is scientific integrity? There is a predisposition to see it in terms of a marginal approach. We might consider integrity as staying within the guidelines of research ethics regulations. It means performing according to the research guidelines, and appropriate outlooks. The question is whether what is considered immoral can be considered moral. It might be true that someone is able to mandate the rules for that group, but it is quite another thing to be able to make or declare things to be moral or immoral.

Integrity is something that involves an active commitment by the person himself/herself. It involves a more reflective viewpoint regarding guidelines, an account focused on the development of various traits, capacities or even virtues of an agent (Dawson 1994). Being ethical possible not just the right decisions being taken by the researcher who is worried about penalties, but taking the right decisions because it is the right thing to do. Research integrity relating to Public Health is not just about perceptions of the 'laws' in publication ethics, but also about taking responsibility for contributing to [the]

scientific initiatives. This brings about the benefit that imperative values that might be mistreated in the ethical guidelines can be appealed to. Working in public health, it might be essential to drive research pointed at stimulating public welfare, equity and the civil rights of individuals and communities.

The resources of what could be considered relevant for research integrity might be comparable to working in public health research. The problem is that the aims of public health work might be different for many reasons. Public health research might be focused on improving the health of populations as well as individuals, it might focus on the distribution of health (and therefore be concerned about health equity and thus seek to identify or respond to identified inequities), it might be focused on preventing, reducing or removing harm or risk of harm, rather than treatment. (Verweij M. / Dawson A. 2007).

At the same time, all agree that information must not be falsified; it is imperative to make sure that the responsibility for what counts as research integrity is not drawn too narrowly in terms of the kinds of research questions that might be asked and the proposed methods that may be used, which could be held to be illegitimate just because they are distinct from those used in clinical research (Verweij M. / Dawson A. 2007). Some headway that has been made in connection with the health of groups may be conditioned by socioeconomic, historical, or other weaknesses that are connected to individual health.

Quite a few methods used in public health research could be considered morally challenging for some interpretations of general research ethics. An ethical researcher should be able to deliver the reasons for these options.

4. Finally, a virtue-based and principle-based Ethical proposal…

Most approaches to promoting integrity in research are principle-based in that they portray ethical conduct as consisting of adherence to ethical rules, duties, or responsibilities. Ethical guidelines and codes of conduct adopted by professional associations are usually framed in terms of rules, duties, or responsibilities (Resnik 2012). For example, the Nuremberg Code (1949), consists of ten directives for human experimentation, the Helsinki Declaration includes thirty-five ethical principles for medical research involving human subjects (World Medical Association, 2008), and The Belmont Report articulates three principles for research involving human beings (National Commission, 1979). In 2010, participants at the 2nd World Conference on Research Integrity drew up the Singapore Statement on Research Integrity, which includes four principles and fourteen responsibilities pertaining to the ethical conduct of scientific research in various disciplines, not just research with human participants. Some examples of professional codes of research ethics stated in terms of rules, duties, and responsibilities include those adopted by the American Chemical Society (2007), the American Physical Society (2002), and the American Society for Microbiology (2005). Principle-based textbooks and monographs in research ethics include works by Shrader-Frechette, Resnik, Macrina, Steneck, Shamoo and Resnik, and the National Academy of Sciences.

Further to the previous analysis of the specificity of scientific integrity, it is important to safeguard two ethical areas in public health research:

- the virtues of the professionals who run the research
- The principles that should be the basis for the design and execution of the studies.

In this regard, we propose to incorporate both perspectives into ethical proposal concerning the conflict of interest, and the reason for this is clear: virtue-based and principle-based approaches to ethics are complementary and both can help promote research integrity.

These two approaches are not mutually exclusive, however, and they can be pursued together. Scientists, educators, institutional leaders, and others involved in research should follow moral principles and champion moral virtues. Education in research ethics should include formal instruction in ethical principles, rules, duties, and responsibilities as well as a demonstration of moral virtues during scientific mentoring. MacFarlane (2008) has made a useful contribution to the research ethics literature by calling attention to the importance of moral virtues in promoting research integrity, but he has not proposed that the principle-based approach should be abandoned.

4.1. Virtues of the public health researcher

To understand the importance of ethical values related to researcher we identify two examples that exhibit problems. On the one hand, there are problems related to gaps in scientific rigour, while on the other hand there is the problem of making recommendations for practice in health. (Weed / McKeown 1998).

In relation to the first problem, the identification of inappropriate research conduct is essential. Among the issues raised by the analysis we draw attention, to manufacturing, falsification and plagiarism of research, among others (Gunsalus, 1993). The problem is what reasonable limits are considered indispensable in this continuum from inappropriate practices to good research practice.

Some authors (Weed & McKeown, 1998) have argued that misconduct in the research process is due in

part to the need for prestige, corporate pressures associated with performance evaluation research and the need for resources. In consequence, the search for truth (Pellegrino, 1992) is replaced. In this sense, the key to cultivating virtue is fidelity to truth and honesty.

The second problem presented reveals that researchers are under serious strain in striking a balance between research findings (with their uncertain outcome) and the need to make recommendations for public policies, health services, programmes and medical practices.

These recommendations, which are part of the process of the dissemination of the results, require the virtue of prudence (which incorporates objectivity, wisdom and excellence).

The problems described above appeal to a prudent attitude that notes the importance of describing their limitations. However, as mentioned by Austin Bradford Hill (Hill 1965), that description can emerge with or without conclusive evidence.

Virtue-based action is only possible, as Pellegrino noted (Pellegrino 1995), when it is based on knowledge of ethical theories, including the theory of the virtues.

4.2. Principles on the design of public health research.

As in any research, the protection of certain ethical principles has become increasingly important, particularly after the Nuremberg Trial.

Besides the ethical obligation to conduct good quality research, the discussion focuses on informed consent, research into vulnerable populations and the balance between the risks and benefits of research and conflict of interest. Three principles have underpinned the discussion about this, motivated by the National Commission for the Protection of Human Subjects of

Biomedical and Behavioural Research (the Belmont Report, 1979): respect, beneficence and justice.

Human dignity appears in all international documents and declarations and is closely tied to this principle set out in the Belmont Report. This link consecrates autonomy and freedom of choice as the ability of individuals to choose according to their convictions, the ultimate aim being social coexistence.

Human dignity has been associated with two [fundamental] rights: the right to privacy and confidentiality, and the right to dispose of oneself. Regarding the first aspect it is interesting to note the growing importance of confidentiality of the data collected on individuals and communities.

Beneficence and risk are a recurring topic in the analysis of research protocols. Research should ensure benefits to the individuals and must minimize potential damage and risks.

Finally, public health research also requires the principle of justice, especially commutative justice, which is the equivalent of compensations in the relationships established between researchers and research subjects. Additionally, solidarity and distributive justice are essential in the framing of research problems, particularly in public health.

Summary and conclusions

Scientific integrity in Public Health requires much more than the traditional research ethics rules and regulations. This does not mean that such guidelines are minor, but that they are only the beginning for the development of integrity. Several aspects of scientific misbehaviour are the most detectable forms of infringement of the meaning of scientific integrity. Still, the strategy to scientific integrity is the progress of ethic

researchers, proficient to handle responsibility for their outcomes.

Instruction and mentoring is an important part of encouraging ethical behaviour[s] as a vital aspect of education within the fields of biomedicine, epidemiology and other areas of public health research. All participants in the pursuit of science have the responsibility to visibly follow and foster the highest standards of ethics and scientific integrity.

Further research on ethics education should be conducted to describe the virtues that operate in science, explore how scientists learn moral virtues, and determine the extent to which virtues have an impact on scientific thinking and behaviour (Resnik 2012).

If we accept the principle of applying ethical principles to decision-making, informed by evidence and theory, it makes sense to widen the concept of logic modelling to 'ethical logic modelling', using the decision-making triangle rather than evidence and theory alone to judge what actions should and should not be included and implemented (Tannahill, 2008).

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