



The health of workers: between science and ethics

La salud de los trabajadores: entre la ciencia y la ética

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In a magnificent book, pioneer of occupational psychology Robert Kahn describes the affective relationships to work (1). Mainly for didactic purposes, his description characterizes these relationships as afflictive, addictive, or fulfilling. The author exemplifies afflictive relationships by describing a worker on an assembly line repeating the same movements over and over, thousands of times a day over the course of his active working life; that is, a characteristic of the so-called “scientific” organization of labor. Addictive relationships are illustrated with the life of an executive at a big company, who does not take interest in anything but his job, even favoring work over his family. In order to describe fulfilling relationships, the author relates the story of three friends who decided to run a bakery in a very poor area, setting as an objective the production of high-quality bread at a low price. Job rotation was structured around three tasks: kneading, baking, and retailing. Despite precarious working conditions this work was very gratifying, particularly the act of delivering the bread. One of the workers told Kahn that what he enjoyed the most was answering the question of what he did for a living, to which he responded, simply: “I make bread.”

Clearly, the relationships that people have to their jobs can be analyzed from a variety of perspectives, emphasizing everything from pleasure to suffering, or from the standpoints of health promotion or deprivation, illness, and death.

Among professionals in the field of occupational health it is widely acknowledged that work affects people’s health. How can we ignore this knowledge that originated hundreds of years ago (with Hippocrates, Pliny the Elder, Ulrich Ellenbog, Georgius Agricola, Paracelsus, and Bernardino Ramazzini)? What is unacceptable is that so many centuries after the discoveries of these masters we are faced with a situation in which – according to data provided by the International Labor Organization (ILO) – between 1.9 and 2.3 million workers worldwide die each year as a result of poor working conditions (2).

In previous editorials published by this journal (3,4), we have seen how power relations and the capitalist economic structure function within the contemporary State. Nonetheless, many of us would be inclined to adopt the position put forth by Gramsci and Rosa Luxemburg, when disputing Lenin they argued that *human beings are at the center of every process of change, and their beliefs, civil society organization, culture, and forms of hegemony are the basis for revolutionary transformations, not the determinism of the economy.*

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That being said, I thought it would be of interest to engage in a bit of navel-gazing in order to determine if such problems are present within our ranks. That is, what happens with individuals dedicated to science and practice in the field of occupational health? To begin I will say that those who put their knowledge to the service of workers do so in fulfillment of their obligations, and it raises concern when this is not the case. Thus, I will focus the discussion on a number of these instances.

All too frequently there is a stark separation between available knowledge and preventive interventions undertaken. However, even more serious situations exist involving the obstruction or falsification of knowledge, which undermine prevention efforts. In order to substantiate these claims several experiences are discussed below.

During the German Surgical Conference of 1895, Ludwig Rehm presented four cases of dye factory workers who suffered from bladder cancer, all of whom belonged to the department producing fuchsine, which had 45 workers (5). Grandhomme, physician at the first company to use nitrobenzene in the production of fuchsine, seemed very sceptical. However, Rehm continued with his studies and in 1906 presented a report on 38 cases from seven different dye factories, all located in Frankfurt. Grandhomme rapidly suggested a geographic cause of the disease, disregarding the cases originating in other cities that had been presented by Schedler one year prior. In one of those cities, it had been demonstrated that workers involved in the production of aniline had a risk of contracting bladder cancer 33 times greater than the general population. In 1921, an ILO document (6) analyzed reports received from different parts of the world and concluded that aromatic amines, especially benzidine, should be considered a cause of bladder cancer. This was the first occupational health warning issued by the ILO. Fifty years later in 1970, it was confirmed that 36 persons died of bladder tumors, all of whom were workers at Italian dye factory Industria Piemontese dei Colori di Anilina (IPCA), which at that moment was popularly known as "*la fabbrica del cancro*" (the cancer factory) (7). In 1982, Carlos A. González (an Argentine epidemiologist living in Spain) estimated that for workers involved in the production of dyes and textile printing in Mataro (Spain), the probability of contracting bladder cancer was almost six times greater than was found in the rest of the population (8). In 1990, the first study on bladder cancer caused by aromatic amines was published in China, where these products had been used since the 1950s (9). This example supports the aforementioned observation: *scientific knowledge does not always lead to prevention*.

Let us now analyze a case presented by prestigious oncologist Wilhelm Hueper (10). Upon suggesting for a second time that an epidemiological study should be conducted in Colorado regarding the impact of radiation in determining the factors causing lung cancer, government scientists argued that lungs did not react to the carcinogenic effects of inhaled radioactive substances and therefore there was no need for further epidemiological research. Consequently, Hueper asserted that the scientific presentations made toward the end of 1879 concerning the risk of lung cancer due to radiation exposure in mines had been censored. The dispute continued until 1971, when a publication by two US government research institutes included a passage from McMahon's preface which stated that the lung cancer epidemic affecting American uranium miners could have been easily predicted, and in fact that it effectively had been, taking into account the experiences of other parts in the world (11).

This case demonstrates the *difficulties faced in occupational risk research*. Nonetheless, determining the extent of risk is a moral mandate, given that workers do not have the possibility to freely choose the conditions and environment in their workplaces. This disadvantage creates its own necessities. Unfortunately the precise determination of risk is in practice very different from the definition of the admissible levels of risk. Therein lies the difference: while the assessment of risk requires all relevant scientific data, the definition of an admissible threshold is not solely based on available scientific knowledge – however limited it may be – but also on other parameters, frequently influenced by economic and political factors and often ignoring (or simply not soliciting) the opinion of those who will be exposed to said risk. In one study that I conducted in Central America, I was able to confirm that almost every country possessed a national pesticide commission that advised on which types of pesticides to register – a telling example of the arguments stated above. These commissions were invariably composed of pesticide manufacturers and distributors, but did not include in their ranks the workers

who would eventually be exposed to these substances. In the case of Argentina, not even the Ministry of Health was granted participation such groups, until a 2009 decree created the National Commission of Investigation on Agrochemicals (CNIA) [*Comisión Nacional de Investigación sobre Agroquímicos*], which was placed under the supervision of the Ministry of Health. The objective of this body was to investigate, prevent, and provide assistance and treatment to persons exposed to agrochemicals in the interest of public health. According to the National Auditor General, “there was no evidence of CNIA progress after 2010” (12 p.26).

In addition to risk assessment, other issues related to this topic very common in contemporary technical literature are *the acceptability of risk* and *cost-benefit analysis*. We will refer to the first of these given that cost-benefit analyses applied to health or environmental issues are, needless to say, unusual.

Following the premise that risk is inherent to life, the concept of “*acceptable risk*” has become a central safety axiom. Therefore, a basic tenet of this principle is that an action is considered safe if the level of risk it implies is tolerable. The first part of this notion entails being able to measure risk – that is to say, the probability and seriousness of an event – as outlined by a scientific procedure; but the second part, which involves making judgments on the tolerability of a degree of risk, demonstrates that this is fundamentally a political-regulatory decision. Furthermore, the individuals exposed to risk have few opportunities to express their opinion about what they consider to be tolerable. Therefore, it is worth posing the question: acceptable for whom? It is likely that the conception of admissibility held by the person who is responsible for the risk differs from that of the person exposed to it.

Even within academic communities problems may arise. Although people attribute objectivity to science, as we have seen history has demonstrated that the uses given to scientific knowledge are varied.

It is clear that scientific efforts should be valued, but it must not be forgotten that their results are not always completely straightforward; they are conditioned by cultural values internal to the scientific community as well as external pressures. For instance, in the case of epidemiology, the research process and its final findings can be biased in terms of project design, selection of cases, selection of controls, and the determination of confounding variables. For instance, if the objective were to demonstrate that asbestos does not increase the risk of lung cancer among exposed workers, it would be sufficient to select a population in which the workers on average had fewer years of service than the duration of the latent period prior to the appearance of the disease upon exposure to this substance. Although it may seem that this idea is not fully developed, it has in fact been implemented. Several years ago, Canada’s National Research Council discovered the shortcomings of the study. They were suspicious of the fact that when this study appeared in Canada, credit for financing was attributed to only one university, but when it was later published in England the researcher stated in the acknowledgements section that the study would not have been possible without the funding of the Quebec Asbestos Mining Association (13).

Under the current regulatory framework, statistical information is commonly requested with a level of confidence of 95% in order to reduce the incidence of false positives. This can have a significant impact if the principle is applied to small populations experiencing diseases that occur infrequently. In this sense, it can be said that in many cases (14) the rule of 95% provides more protection for the companies producing certain substances than for the potential victims. Something similar occurs with the standards adopted to establish the admissible concentrations of toxic substances in workplaces. As is the case of most countries, Argentina has adopted standards from the American Conference of Governmental Industrial Hygienists, which by definition do not protect hypersensitive individuals, a group accounting for roughly 10% of the population.

Preventive services provided by companies also seem to be an area of ethical conflict. In the preface of his book *El ejercicio de la medicina del trabajo* (15), Andlauer points out that physicians working for companies are often faced with a double bind: on the one hand, that their advice may not be taken into account; or, more seriously, that they may be used as an instrument to defend the employer’s interests. For instance, a study of 13 productive sectors conducted in Argentina (16) illustrated several points regarding workplace health: a) pre-employment medical examinations are aimed at selecting people, even though their objective should be to adapt the job to the person; b) the administration of periodical

tests is low, and when they are performed, there is limited use of sensitive and specific indicators for the proper control of workers' health; c) in many cases, controlling absenteeism is the only function performed, and; d) only on rare occasions is the workplace environment monitored. Regarding *safety and sanitation services*, the most frequent tasks reported were: a) providing tools for personal protection instead of engineering the elimination or control of risk; b) identifying the worker as the cause of the accident suffered – that is, making the concept of “unsafe action” the focus of investigation into incidents.

It should be recalled that the so-called “best practices” in occupational health are based on four elements: *scientific evidence, quality, legal compliance, and ethics*.

In this brief review several problems have been identified that merit further discussion. Therefore, as a tentative conclusion, I would say that it is our duty to adopt an introspective point of view and to recover, wherever necessary, the “best practices” that should inform our work, in order to contribute to a more egalitarian society with better worker health.

BIBLIOGRAPHIC REFERENCES

1. Kahn R. Work and health. New York: John Wiley & Sons; 1981.
2. International Labor Organization. Preguntas y respuestas sobre la prevención de las enfermedades profesionales [Internet]. 23 Apr 2013 [cited 10 May 2013]. Available from: http://www.ilo.org/safework/events/meetings/WCMS_211485/lang-en/index.htm.
3. Santana VS. Empleo, condiciones de trabajo y salud [Editorial]. Salud Colectiva. 2012;8(2):101-106.
4. Minayo Gómez C. Historicidad del concepto “salud del trabajador” en el ámbito de la salud colectiva: el caso de Brasil. [Editorial]. Salud Colectiva. 2012;8(3):221-227.
5. Rehn L. Blasengeschoolste bei Fuchsin-Arbeitern. Archiv für Klinische Chirurgie. 1895;50:588-600.
6. International Labour Office. Cancer of the bladder among workers in aniline factories [Internet]. Geneva; 1921 [cited 20 Feb 2013]. Available from: http://defendingscience.org/sites/default/files/upload/ILO_1921.pdf.
7. Benedetto P, Masselli G, Spagnoli U, Terracini B. La Fabbrica Del Cancro L'IPCA Di Ciriè. Torino: Einaudi; 1976.
8. González CA. Ocupación, trabajo, café, y cáncer de vejiga en la Comarca del Maresme. Barcelona: Universidad Autónoma de Barcelona; 1983.
9. Rodríguez CA. No aceptar cancerígenos. Por Experiencia [Internet] 2001 [cited 1 Feb 2013];(14). Available from: <http://www.porexperiencia.com/articulo.asp?num=14&pag=12&titulo=No-aceptar-cancerigenos>.
10. Hueper W. Occupational tumors and allied diseases. Springfield: Charles C Tomas; 1942.
11. Sella C. Discovering environmental cancer: Wilhelm Hueper, post-World War II epidemiology, and the vanishing clinician's eye. American Journal of Public Health. 1997;87(11):1824-1835.
12. Auditoría General de la Nación. Control de gestión ambiental realizado en el Servicio

Nacional de Sanidad y Calidad Agroalimentaria: Informe de auditoría [Internet]. 13 Dec 2012 [cited 2 Feb 2013]. Available from: http://www.agn.gov.ar/informes/informesPDF2012/2012_247.pdf.

13. Epstein SS. The politics of cancer. New York: Anchor Books; 1983.

14. Cranor CF. Some moral issues in risk assessment. *Ethics*. 1990;101(1):123-143.

15. Andlauer P. El ejercicio de la medicina del trabajo. Barcelona: Editorial Científica Médica; 1980.

16. Rodríguez CA. Salud y trabajo: la situación de los trabajadores en la Argentina. Buenos Aires: Centro Editor de América Latina; 1990.

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