

ORIGINAL ARTICLE

Ethics in research involving prisoners

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Abstract

Research involving prisoners repeatedly went astray during the last century, culminating in the cruel medical experiments inside the Nazi concentration camps that gave rise to the Nuremberg Code. However, prisoners continued to become victims of scientific exploitation by the rapidly evolving biomedical research industry. The common roots of these abuses were the flawed philosophy that the needs of the society outweigh the needs of the individual and the researchers' view that prisoners are cheap, easy to motivate and stable research subjects. Prisoners are vulnerable to exploitation and abuse by research because their freedom for consent can easily be undermined, and because of learning disabilities, illiteracy and language barriers prevailing within prisoner populations. Therefore, penal laws of some countries supported by a number of internationally agreed documents prohibit research involving prisoners completely. However, prisoners must also be regarded as vulnerable to the specific health problems in prisons, e.g. transmissible diseases, mental disorders and suicide – problems that need to be addressed by research involving prisoners. Additionally, the participation of prisoner patients in research they directly can benefit from should be provided. Hence, it must be a common objective to find the right balance between protection from exploitation and access to research beneficial to prisoners.

Keywords: *prison research, ethics*

Introduction

In spite of the past abuses, exploitations and crimes perpetrated on prisoners in the name of research that gave rise to the establishment of national and international regulations prohibiting or severely restricting research involving prisoners, the debate on prisoners as research subjects has recently been undergoing a revival (Gostin, 2007; Institute of Medicine, 2006; Lerner, 2007). The advocates for a relaxation of the existing safeguards are as different as their potential motives: prisoners' representatives plead for access of prisoner patients to clinical studies they can benefit from, but participation in research projects may also be favoured by prisoners in expectation of rewards. Scientists may be interested in specific medical or social problems of prisoners that cannot be studied without involving

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prisoners as research subjects, whereas other researchers and sponsors might merely look for the convenience and advantages that a prisoner population presents for their research projects. The public should be interested in research involving prisoners on those public health problems that result from prison conditions and affect both the prison population and the community at large. However, a community, or parts of it, may also be tempted to undertake research involving prisoners as research subjects in circumstances that would not be imposed on non-prisoners.

In light of this renewed discussion, it is this article's aim to explore the history and background of exploitative research involving prisoners, the evolution of codes on research ethics, the vulnerability of prisoners, regulative ethical safeguards against exploitation of prisoners by research (in national and international laws, declarations and guidelines), the recently recognized need for access of prisoners to beneficial research, and the inherent inverse interrelation between protective measures against abuse of prisoners by research and access of prisoners to research. Recommendations how to balance best between protection of prisoners and access to research prisoners can benefit from are proposed.

The past century

When addressing research involving prisoners, it is advisable to have a look at the past century when research in prison repeatedly went astray.

Reports on biomedical experimentation in prisons severely violating human rights date from as early as 1906 and 1912, when a doctor (who later became a Harvard professor) in Bilibid prison in Manila caused the death of prisoners in cholera and beriberi experiments. Other early examples are the 1915 experiments in the Stateville Prison in Mississippi prisons on pellagra and bizarre experiments with testis transplantations in the San Quentin prison from 1919 to 1922 (Hornblum, 1997; Lederer, 1995; Stanley, 1922).

Exploitation and abuses of prisoners culminated during the World War II. Inside the Nazi concentration camps and the Japanese Unit 731, cruel experiments on high altitude, freezing, sea water, malaria, epidemic jaundice, spotted fever, typhoid, bubonic plague, anthrax, tissue regeneration and transplantation, mustard gas, incendiary bombs and biological weapons were conducted on detainees, resulting in innumerable deaths (Annas & Grodin, 1992; Nie, 2006). There are also reports on research involving US prisoners during World War II on malaria, sand fly fever, dengue fever, sleeping sickness, gonorrhoea, gas gangrene and beef blood injections (Hornblum, 1997). Some, but not all, of these experiments were aimed at gaining knowledge for military purposes. The crimes of the Nazi doctors were the subject of the Doctors' Trial during the Nuremberg Trial and gave rise to the Nuremberg Code (1947) on research involving humans (Annas & Grodin, 1992).

Paradoxically, in spite of the Nuremberg Code developed by US experts present at Nuremberg, it was increasingly US prisoners who after World War II became victims of scientific exploitation by the rapidly evolving biomedical research industry. Prisoners again were infected with contagious material (histoplasmosis, infectious hepatitis, syphilis, amoebic dysentery, malaria, influenza), injected with living cancer cells and subjected to radiation and toxic agents (Hornblum, 1997; Lerner, 2007; Welsome, 1999). Until 1975, 90% of all new pharmaceutical products were tested on prisoners, and Phase I clinical studies (i.e. studies that explore the metabolism, toxicity and safety of new drugs in humans) were performed almost exclusively on prisoners, often by neglecting or bypassing ethical principles already laid down in corresponding codes for research ethics (Gostin, 2007; Hornblum, 1997).

Codes on research ethics

Table 1 tracks the development in the twentieth century of ethical codes, and other significant events, in research involving humans.

Table 1. Twentieth century important events and documents on research ethics.

1900 Yellow Fever Commission	First systematic use of written informed consent
1900 Berlin Code	Informed consent, capacity for consent
1931 Reich Circular	Informed consent, well-being of the subjects
1947 The Nuremberg Code	Informed consent, voluntary consent: free power of choice Avoidance of unnecessary suffering, risk of death and disabling injury Risks in proportion to humanitarian importance Beneficence for society
1964 (→2000) WMA Declaration of Helsinki	Respect for privacy, confidentiality, dignity of research subjects Informed consent Competence for consent Interests of the research subjects above interests of science and society Vulnerable research populations Risk/benefit assessment Research protocol and independent research ethic committee Publisher's ethical obligation
1974 (→2003) US Federal Regulations 'Common Rule'	Informed consent Risk/benefit analysis Institutional review board Vulnerable research populations Prisoners: only minimal risk 4 permitted categories Limited incentives, fair recruitment
1979 US Belmont Report	Respect for the research subject Beneficence or non-maleficence Justice: fair distribution of burdens and benefits
1980 FDA	Phase I clinical studies banned from prisons
1993 (→ 2002) CIOMS Guidelines	Respect, beneficence, justice Scientific qualification Ethical review committee Informed consent, capacity of consent Benefit/risk analysis Vulnerable persons (including prisoners): limitations of risks Confidentiality Undue inducement
1995 WHO Guidelines for Good Clinical Practice Trials on Pharmaceutical Products	Informed consent Research protocol, ethical review committee Risk/benefit assessment Confidentiality Vulnerable subjects

→ denotes last amendment.

The systematic use of written informed consent by research subjects was first documented in 1900 by the Yellow Fever Commission. In the same year, the Berlin Code stressed the importance of informed consent as well as the competence of research subjects for consent (Preussisches Ministerium für Religion, Unterricht und Medizin, 1990). The 1931 Reich Circular, Guidelines on New Therapies and Experimentation Involving Humans by the German Reichsminister des Inneren, reinforced the requirement for informed consent but was simply neglected later on by the Nazis (Reichsminister des Inneren, 1931).

The 1947 Nuremberg Code laid special emphasis on the essential nature of voluntary consent, and the researcher's responsibility for the quality of consent:

1. The voluntary consent of the human subject is absolutely essential.
 - This means that the person involved should have legal capacity to give consent; should be so situated as to be able to exercise free power of choice, without the intervention of any element of force, fraud, deceit, duress, over-reaching, or other ulterior form of constraint or coercion; and should have sufficient knowledge and comprehension of the elements of the subject matter involved as to enable him to make an understanding and enlightened decision. This latter element requires that before the acceptance of an affirmative decision by the experimental subject there should be made known to him the nature, duration, and purpose of the experiment; the method and means by which it is to be conducted; all inconveniences and hazards reasonably to be expected; and the effects upon his health or person which may possibly come from his participation in the experiment.
 - The duty and responsibility for ascertaining the quality of the consent rests upon each individual who initiates, directs or engages in the experiment. It is a personal duty and responsibility which may not be delegated to another with impunity.

Other ethical postulates of the Nuremberg Code include the avoidance of 'unnecessary' suffering and risks of death or disabling injury of the subjects, the degree of risks to be in proportion to the humanitarian importance, the liberty to end the experiment by the subject or by the researcher at any time the risks are considered to be disproportional, the beneficence of the research for society and the scientific qualification of the researcher. Although the Nuremberg Code originated as a response to the criminal experiments on detainees in Nazi concentration camps, it makes no mention of the special vulnerability of persons deprived of their liberty (Nuremberg Code, 1947).

The World Medical Association's Declaration of Helsinki from 1964 amended 1975, 1983, 1989, 1996 and 2000 added to the ethical norms of the Nuremberg Code the principles of respect for the privacy, confidentiality, integrity and personality of the research subjects (World Medical Association, 2004). In particular it was stressed that the interest of the subject must always prevail over the interest of science and society. Also strengthened were the importance of a clear research protocol including predictable risks and foreseeable benefits to be submitted to an independent ethical review committee for consideration, comment, guidance and approval; the ethical obligation for authors to preserve the accuracy of results and for publishers to publish no research results that were not obtained in accordance with the ethical principles of this declaration. In contrast to the Nuremberg Code that declares voluntary consent as absolutely essential, the Helsinki Declaration acknowledges in certain circumstances the need of research with subjects who for legal, mental or physical reasons are not competent to give or refuse consent and gives directives

on obtaining surrogate consent. It also declares that medical research is only justified if there is a reasonable likelihood that the populations in which the research is carried out stand to benefit from the results of the research. With regard to vulnerable research subjects it states in article 8:

Some research populations are vulnerable and need special protection. The particular needs of economically and medically disadvantaged must be recognized. Special attention is also required for those who cannot give or refuse consent for themselves, for those who may be subject to giving consent under duress, for those who will not benefit personally from the research and for those for whom the research is combined with care.

In the United States, the infamous Tuskegee syphilis experiments and the public scandal around the industrial experimentation involving prisoners in Holmesburg prison (Hornblum, 1998) led in 1974 to the initiation of the Federal Policy for the Protection of Human Subjects (Federal Register, 1977). This underwent modifications and revisions in 1981 and 1991, and became known as the Common Rule. The 1979 Belmont Report's three main issues – respect for the persons involved in research, beneficence (or non-maleficence) of research and justice in terms of fair distribution of burdens and benefits of research – contributed to the revisions of the Common Rule (Office of Human Subjects Research, 1979).

The Common Rule contains requirements for informed consent, risk/benefit analysis and the review of institutional review boards (IRB) and provides extra protection for particularly vulnerable research subjects including detailed restrictions for research involving prisoners in subpart C of the document. Research on prisoners must present no more than minimal risk, defined as the probability and magnitude of physical or psychological harm normally encountered in the daily lives or in routine medical or psychological examination of healthy persons. Research is permitted only if it is related to (1) causes, effects and processes of incarceration, (2) prisons as institutional structures or prisoners as incarcerated persons, (3) conditions particularly affecting prisoners as a class, and (4) practices that have the intent and reasonable probability of improving the health or well-being of research participants. Further conditions in subpart C stipulate that any incentives for participation in research must be of such a magnitude that the freedom of choice for participation are not impaired in the limited choice environment of a prison and that the selection of participants are fair and random.

These regulations, providing strong protection for prisoners from exploitation by research, have recently been criticized for being too restrictive and prohibitive for access of prisoners to research. However, it must be noted that the Common Rule applies only to research funded by the US Department of Health and Human Services, and to a few federal agencies and institutions that voluntarily comply with it, whereas the majority of prison research in the United States is still conducted without compliance with subpart C of the Common Rule (Code of Federal Regulations, 1974; Gostin, 2007). It was not until 1980 that the United States Food and Drug Administration (FDA), in accordance with subpart C of the Common Rule, banned clinical Phase I studies of new drugs from prisons (Federal Register, 1980).

The International Ethical Guidelines for Biomedical Research Involving Human Subjects, edited 1993 and revised 2002 by the Council for International Organisations of Medical Sciences (CIOMS) in collaboration with the World Health Organization (WHO), is based on the same general principles as the Belmont Report (i.e. respect for persons, beneficence and distributive justice of research). Primarily intended to provide guidelines

covering the new issue of research in developing countries, these guidelines thoroughly address ethics in research on vulnerable subjects with limited resources and limited autonomy including prisoners and advocate for special limitations on risk if such subjects are involved in research (Council for International Organizations of Medical Sciences, 2002).

The 1995 WHO Guidelines for Good Clinical Practice, following closely the ethical principles of the Declaration of Helsinki and the CIOMS Guidelines, point out that if vulnerable research subjects including prisoners are recruited in a trial, the ethics committee should consider carefully the appropriateness of the informed consent process (World Health Organization, 1995).

Given the predominance of prisoners as victims of exploitation in research involving humans, it is remarkable how little mention is made of them in the quoted international documents. It is only in the 1978 revision of the Common Rule, in the FDA document and in the CIOMS and WHO guidelines that their specific vulnerability is addressed. Regarding legal protection, in comparison with the many international and regional human right treaties and laws providing the right of prisoners to health care, consent issues of prisoners and protections against non-consensual treatment (Lines, 2008) there is a scarcity of legal instruments on research involving prisoners as research subjects. The domestic legislation in some countries prohibit biomedical or clinical research involving prisoners (Germany: Arzneimittelgesetz, 1976; California Penal Code, 2007) or medical research involving prisoners altogether (Austria: Strafvollzugsgesetz, 2002), whereas most countries do not have special legal regulations for research on prisoners. There is no international provision with legal force regulating research involving prisoners except the recent Additional Protocol to the Convention on Human Rights and Biomedicine concerning Biomedical Research that is binding to those countries that ratified it (Council of Europe, 2007).

What can be learnt from this look back to the history of research ethics?

What drove and drives academically educated researchers to neglect basic human rights of research subjects? Is there a common denominator for the exploitations, abuses and crimes perpetrated on prisoners and others in the name of research?

According to the ethicist Daniel Eisenberg, the common root was the flawed philosophy that the needs of the society outweigh the needs of the individual (Eisenberg, 2004):

The common denominator was the belief that caring for society takes precedence over caring for the individual. In every case, society became the patient and the individual became unimportant. It is exactly the desire to help mankind at the expense of each man that leads to moral bankruptcy . . . When the medical profession strays from its mandate to protect health and life and enters into the realm of social policy, it risks aligning itself with immoral forces that may pervert it beyond recognition.

This opinion was reflected in article 5 of the Basic Principles of the 1964 version of the Declaration of Helsinki:

Concern for the interest of the subject must always prevail over the interests of science and society.

Unfortunately, in the last revision of the Declaration of Helsinki, this principle reads much weaker:

In medical research on human subjects, considerations related to the well-being of the human subject should take precedence over the interests of science and society.

Other less philosophical yet human driving forces, such as the careerism of scientists and the profit interests of drug manufacturing companies, are also part of the context leading to the violation of the human rights of research subjects. The shift of health care research from university-based projects to private business interests and the steady growth of for-profit contract research companies are factors contributing to the latter.

Prisoners were also attractive research subjects for eager biomedical scientists because, in their terms, research involving prisoners was cheap, prisoners were easy to 'motivate', were regarded as stable research subjects who live in a closed research environment and the continuity of their follow-up was well guaranteed. Additionally, prison walls kept prisoners inside and public eyes outside (Hornblum, 1997).

In terms of ethics, prisoners must be regarded as a population vulnerable to exploitation because they have no liberty, impaired autonomy and privacy, they are impecunious and the prevailing health facilities in many prisons are deficient. Therefore offering rewards as incentives for compliance – be they parole, payment or better health care – have the potential to severely undermine the freedom of their consent. Within prisoner populations there is a high prevalence of reading and learning disabilities, illiteracy, language barriers, mental impairments and psychiatric disorders, substance use, drug dependency and other chronic health injuries. Many prison systems also have a disproportionately high representation of ethnic and cultural minorities. Given this context, and keeping in mind the first article of the Nuremberg Code, reasonable doubts were raised whether full informed consent can at all be obtained from prisoners and this is still an ongoing discussion (Elger, 2008; Graebisch, 2002; Institute of Medicine, 2006).

These doubts are reflected in laws of some European countries, such as Germany (*Arzneimittelgesetz*, 1976) and Austria (*Strafvollzugsgesetz*, 2002), and several states of the United States that prohibit experiments on prisoners regardless of prisoners' consent. These doubts are expressed also in Principle 22 of the United Nations High Commissioner of Human Rights (UNHCHR) Body of Principles for the Protection of Detained or Imprisoned Persons (UNHCHR, 1988):

22. No detained or imprisoned person shall, even with his consent, be subjected to any medical or scientific experimentation which may be detrimental to his health.

They also found their way into the United States Common Rule and severely restrict research involving prisoners in federal institutions (*Code of Federal Regulations*, 1974).

In spite of their protective intention, the codes, declarations, regulations and guidelines cited above were obviously not sufficient to prevent abuses and exploitations of research subjects. Many of their ethical requirements, each of them indispensable, but none of them sufficient for the protection of research subjects, are, often of necessity, weakly defined. The majority of the instruments cited originated as responses to preceding abuses of research subjects. Therefore, they focus on protective and restrictive measures especially in vulnerable research populations but, with the exception of the CIOMS guidelines, fall short of advocating for the right of these populations to gain access to research they can benefit from.

Discussion

Without any doubt, abolishing any research involving prisoners guarantees their protection against abuse and exploitation by researchers. However, prisoners are, as a population, particularly vulnerable to health problems (i.e. substance use and addiction, blood-borne viruses, tuberculosis and, increasingly, multi-resistant tuberculosis, mental health disorders, violence and suicide). Each of these health concerns is much more evident in prisons than in the general population, and each of them can be exacerbated from imprisonment itself. They adversely affect each other and all of them are adversely affected by both the prevailing overcrowding and the lack of resources in prison systems (Pont & Wool, 2006; World Health Organization, 2007). Additionally, the vast majority of prisoners will be released and will carry these health problems back to the community. Therefore, penitentiary health must be regarded as an integral part of the public health system (World Health Organization, 2003).

While the improvement of some of these problems can and must be addressed by research outside of prisons, others inevitably must be tackled by research in prison and involving prisoners due to the specific prison environment. Examples include implementing harm reduction measures (opiate substitution programmes in prison, syringe/needle exchange programmes), suicide prevention in prison and the impact of prison structures on prisoners' health and well-being. Moreover, the rapidly evolving improvements during the last decade in the treatment of HIV and hepatitis C, both infections with high prevalence in prisons, have shown that the participation in Phase III clinical trials (i.e. trials comparing effective new treatments with the best currently available treatment) often can offer a direct and timely benefit to patients. These benefits should not be withheld from prisoner patients, for to do so would violate the ethical principle of equivalence of health care between prisons and the community. This need of specific research for the benefit of prisoners is well acknowledged also by the European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment (CPT, 2004):

48. ... The CPT would add that it favours research concerning custodial pathology or epidemiology or other aspects specific to the condition of prisoners.

Whereas in 1987 the Council of Europe Recommendation on European Prison Rules regarding research in prison confined itself to 'Prisoners may not be submitted to any experiments which may result in physical or moral injury', the later recommendations from 1993, 1998, 2006 and the Additional Protocol to the Convention on Human Rights and Biomedicine concerning Biomedical Research increasingly recognized the need for research concerning prison-specific topics, and outlined prerequisites and safeguards necessary for research involving prisoners (Council of Europe, 1987, 1993, 1998, 2006, 2007).

Protecting prisoners from exploitation by research and giving prisoners access to participate in research may, at first sight, look like separate, incoherent ethical demands. In fact, they are of necessity interrelated. At the one extreme, prohibiting any research on prisoners provides a maximum of protection against abuse by researchers, but allows no access to research. On the other, abolishing all restrictions for research involving prisoners bears the risk of exploitation as shown in the past but, at least theoretically, would allow free access to research. In between these extremes, the more cautious, protective and restrictive the approval procedures are for research in prison, the greater the barriers to beneficial research as researchers are discouraged from including prisoners in studies, and prisoners are discouraged from participating in research. On the other hand, the less restrictive the

protective measures, the greater the risk of the abuse of prisoners by research. Thus, a careful balance between the two ethical demands is to be sought (Elger, 2008).

In this context, there are presently two differing approaches to research involving prisoners:

1. Laws of several countries and the Body of Principles for the Protection of Detained or Imprisoned Persons by the United Nations High Commissioner of Human Rights, ban research involving prisoners regardless of their consent altogether (Arzneimittelgesetz, 1976; Strafvollzugsgesetz, 1969; UNHCHR, 1988). The rationale is that completely voluntary consent is not possible in total institutions such as prisons (Goffman, 1961), that consent has not prevented inhuman experiments on prisoners, that even very poor incentives for participation as research subjects are in prison often too good an offer to be refused and that consent can be seen as a pretext to make vulnerable research subjects responsible for potential adverse sequels of research (Graebisch, 2002). However, the resulting lack of access of prisoners to research they can benefit from clearly comes down to a violation of the principle of equivalence of health care (CPT, 2004).
2. Most of the quoted guidelines and regulations acknowledge the right and the need of prisoners for access to research and, in order to protect prisoners from abuse, impose special caution on the process of informed consent and restrictions on research involving prisoners. Of the many issues of the informed consent process that apply to research projects involving humans also outside of prisons, it is the absence of institutional pressure and of undue inducement that is particularly required for research involving prisoners. Regarding restrictions, there are two kinds of restrictions in use; those by categories of research and those by degree of risks.

Permitted categories for research involving prisoners are those projects that hold out the prospect of direct benefit to individual prisoners (e.g. prisoner patients) or at least to prisoners as a group. Restrictions by degree of risk allow either no risk of any physical or mental or moral injury at all (Council of Europe, 1987, 2006; UNHCHR 1988), therefore prohibiting most research as there is practically no research without any risk for research subjects or that require only minimal risk to be taken, defined as the probability and magnitude of physical or psychological harm normally encountered in the daily lives or in routine medical or psychological examination of healthy persons (Code of Federal Regulations, 1974; Council for International Organizations of Medical Sciences, 2002) or as a very slight and temporary negative impact on the health and comfort of a research subject (Council of Europe, 2007).

These restrictions more or less impeded responsible research involving prisoners and thus raised the recent discussion on their relaxation (Gostin, 2007; Institute of Medicine, 2006; Lerner, 2007). However, caution is required. Re-opening the participation of prisoners in biomedical research is not only advocated by prisoner patients, prisoner representatives and humanitarian committees, but is also avidly pursued by the rapidly evolving and powerful industrial contract research industry that is in need of human research subjects. Presently, the most sought after populations to serve as human research subjects are those in underdeveloped countries, impoverished people and prisoners (Elliott & Abadie, 2008; Graebisch, 2002). The following excerpts from the Institute of Medicine document *Ethical Considerations for Research Involving Prisoners* should raise concerns about the efforts to expand research in prisons, and serve as a warning against opening any doors for abuse by research so cruelly documented in prisons in the past century:

In particular, the committee rejects strong protectionism because it discounts the notion that researchers can be trusted to act virtuously in the protection of subjects.

... the myopic emphasis on informed consent ... should be abandoned in favor of a risk-benefit paradigm.

... the potential benefit of a research protocol can justify research involving prisoners. (Institute of Medicine, 2006)

On the contrary, history shows that researchers cannot necessarily be trusted to act virtuously. A perspicacious focus on informed consent should never be abandoned. Regardless of how big the expected benefit for science and society might be, concern for the interest of the subject must always prevail over the interests of society.

Combining these considerations, the best possible way of balancing between protection from exploitation by research and providing access to research from which prisoners can benefit is to examine first the extent and immediacy of expected benefits of a research project to prisoners and second to evaluate the expected risks.

At best, prisoners should be integrated in the planning of the research project. The greater and more direct are the expected benefits for prisoners, the more risks can be conceded and vice versa. This careful weighing of benefits and risks for prisoners is one of the many challenges research ethical committees face when examining research projects with involvement of prisoners.

Another is scrutinizing the consent process and confidentiality. As a prerequisite for consent, information and communication has to take into account the language barriers and reading/learning disabilities prevailing in prisoners, and should continue throughout the period of the research project. Care has to be taken that prisoners with reading/learning disabilities, who often are in greatest need of health care, are not excluded but approached with special attention to their needs and careful assessment of their ability to provide informed consent. Determining the competence of consenting (i.e. the capacity of understanding the given information and of making a decision on the basis of the given information whether to participate as a research subject) is critical in striking a proper balance between respecting the autonomy of subjects who are capable and protecting those with cognitive impairment. In case of doubt, appropriate structured interviews such as the MacArthur Competence Assessment Tool for Treatment can be used (Appelbaum, 2007). However, prisoners identified as being incompetent to provide informed consent due to their mental health should not participate in research projects run in prisons. Indeed, people with severe mental disorders should be diverted away from prison in the first place, and research involving subjects incompetent to provide informed consent (i.e. those in need of substituted consent) should not be performed in prisons.

There is no question that research ethics committees should ensure as far as possible the freedom from any kind of coercion or intimidation, as well as any inducement by offering paroles, payments or any other advantages for participation, when consent is being sought. Adequate health care standards for all, not only the participating prisoners are, in this context, also of great importance. Likewise, confidentiality and privacy, difficult to obtain and maintain in prison, have to be respected as far as possible and their limitations should be well defined and explained to prisoners. Measures set to guarantee fair and random recruitment of participants without intervention of the prison authorities should also be verified by the research ethics committee. Given all the complex tasks ethic committees have in considering prison research projects, on-site monitoring of research ethics (i.e.

inside the prison walls) by members of the committee is necessary. The research ethic committees should also keep an eye on the intended publishing policy of the research, particularly that prisoners are provided appropriate access to the yielded research results.

The central role ethics committees play in research ethics, and particularly in research involving prisoners, contrasts with the weak definitions of their constitution and composition. Most of the existing research ethics committees constituted themselves based on more or less stringent guidelines. The Helsinki Declaration requires a:

specially appointed ethical review committee, which must be independent of the investigator, the sponsor or any other kind of undue influence. This independent committee should be in conformity with the laws and regulations of the country in which the research experiment is performed.

The British National Health System (NHS) proposes a balanced age, gender and ethnic distribution of the members of research ethics committees, a mixture of experts and lay members and at least one third of the maximum of 18 members to be lay members independent of the NHS and half of these to be without any professional health or social care background (NHS, 2001), whereas the United States Office for Human Research Protection (OHRP) claims at least 5 members of varying background, race, gender and cultural background, at least one of these with a primary concern for science, at least one with a primary concern for a non-scientific area, and at least one not affiliated with the institution. Specifying research involving prisoners, the OHRP requires the following additional composition of institutional review boards:

A majority of the IRB (exclusive of prisoner members) shall have no association with the prison(s) involved, apart from their membership on the IRB. At least one member of the IRB must be a prisoner, or a prisoner representative with appropriate background and experience to serve in that capacity, except that where a particular research project is reviewed by more than one IRB, only one IRB need satisfy this requirement. In the absence of choosing someone who is a prisoner or has been a prisoner, the IRB should choose a prisoner representative who has a close working knowledge, understanding and appreciation of prison conditions from the perspective of the prisoner. (Office for Human Research Protection, 2003)

However, up to now, there exists little if any practical experience and no published reports on the inclusion of prisoners or prisoner representatives in research ethics committees.

As pointed out in the Declaration of Helsinki, a major issue is the independence of ethical review committees from the investigator. In the United States, research ethics committees are called institutional review boards, a name not really suggesting independence from the investigating institution. In fact, the researcher in charge of the iniquitous experiments in Holmesburg prison was a member of the IRB of the Pennsylvania University School of Medicine supporting these experiments. In order to enhance independence of ethical review boards, a statement on potential conflicts of interest of each member of the boards for each research project should be required; in the same way that it has become an obligation for authors of peer reviewed scientific papers. Likewise, the emergence of for-profit IRBs gives rise for concern regarding the independence of these committees (Elliott & Abadie, 2008). However, the compensation for time, resources and expertise of qualified and independent ethical review boards in many countries is a largely unsolved question. This may add to the fact that in many countries qualified research ethics committees do not

yet exist, a shortage hopefully to be ameliorated by the UNESCO Assisting Bioethics Committee (UNESCO, 2005).

The executive power of research ethics committees does not reach beyond granting or withdrawing formal approval. Nevertheless, in a system where funding of research projects and publication of results are only conceded if approval of independent ethics committees was given, the approval mechanism comes up to an effective enforcement of ethical conduct of research. The evolving rules on central registration and oversight of all research projects are able to further strengthen this process. For research involving prisoners central registration has been proposed by the Institute of Medicine and is already implemented in an exemplary manner in England and Wales (Institute of Medicine, 2006; Prison Health Research Network, 2007).

Although the scope of this paper is ethics in research involving prisoners, the question of research conducted outside of prisons that excludes prisoners as a group although they might benefit from it merits some consideration. The issue is a significant one because, as mentioned earlier, research disregarding prisoners on topics like drug use, HIV/AIDS, hepatitis C, tuberculosis and suicide would neglect that a considerable proportion of people affected are held in prison and that the prevalence of these conditions within prisons is often much higher than in the general population. Disregarding prisoners in these areas of research not only comes up to a selection bias in terms of scientific statistics but also to a violation of the principle of equivalence and to an unjust distribution of benefits of research (if prisoners could expect a direct benefit from the research project). Thus, guideline 12 of the CIOMS Guidelines states, 'The exclusion of groups or communities that might benefit from study participation must be justified'. As research ethics committees not familiar with prison problems might not be aware of this matter, advocates for prisoners' interests like health care practitioners in prison should make themselves informed about relevant research projects outside prisons and claim the inclusion of prisoners – again, the central registration of research projects would facilitate this issue considerably.

Most of the presented documents, guidelines, recommendations and ethical considerations derive from and were developed for biomedical research. This preponderance is due to the terrible offences and injuries caused by biomedical research in the past. The comparatively scarce literature on ethics of behavioural and psychosocial research in prison and the absence of physical risks should not lead to the assumption that these fields of research are without ethical implications. Particularly, confidentiality of intimate personal data as well as informed consent for interventional research requires at least as much if not greater concern than in biomedical research. Nevertheless, in principle, the ethical considerations on research involving human subjects in prison apply for biomedical research just as well as for behavioural and psychosocial research.

In conclusion, in finding an optimal balance between protection of prisoners from abuse by research and providing access to research prisoners can benefit from, all partners in research involving prisoners, i.e. prisoners, researchers, research ethical committees, sponsors, publishers and authorities, currently should agree to the following rules.

Research should have a high probability of direct benefit to prisoners and not more than proportional risk. Any other research involving prisoners is only justified if the results yielded cannot be obtained by research in the community, if at least a group benefit for prisoners can be expected, and if the risks of the research are low. Examples include intervention trials testing harm reduction measures for drug use and disease transmission in prison or psychosocial intervention studies that are specific to the prison environment. Given the vulnerability of prisoners, the informed consent process and confidentiality afford

extraordinary attention and ongoing as well as on-site scrutiny by the research ethics committee. Adequate health care facilities for all prisoners in the involved prison should be in place and fair and random recruitment procedures should be guaranteed. Research ethics committees should identify their independence from sponsors, investigators and prison administrations by statements of absence of conflicts of interest for each member, should be composed of a fair distribution of scientists and lay members of different gender, race, cultural and social background and should be obliged to include prisoners or prisoner representatives as members of their boards. Central registration of research projects including research projects involving prisoners should become obligatory and neither funding nor publication of research projects without approval of an independent research ethics committee should be authorized.

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