

Bioethical problems in the use of laboratory animals for medical experiments in Nigeria

Udodi Onwujekwe, student of III course VI medical faculty; Olga I.Gerasimenko,
Ph.D., associate professor of Department of hygiene and ecology #1,
Kharkiv National Medical University

Leading teaching and research institutions in Nigeria recognize the value and importance of scientific research. Virtually all research conducted in the biological science/ agricultural and medical complexes of universities in the country involve the use of animals. Research institutions believe that research with animals is necessary but ethical conducts should be observed ethical conducts since such research advances our ability to improve human and animal wellbeing.

The welfare of animals used in research has gained attention globally that has led to the development of guidelines and national laws governing animal experimentation. In more advanced countries however, animal model based research is being replaced with non-animal model techniques which include synthetic models, cadaver models as well as computer simulations. These styles of research are often unavailable in poorer developing countries, hence animal research remains relevant in both biomedical research and surgical training.

Such committees as Ahmadu Bello University Subcommittee on Animal Use and Care (ABUSAUC) and similar committees in other universities across the country, National Health Research Ethics Committee of Nigeria (NHREC/N)- Federal Ministry of Health have been set up to ensure that procedures that involve the use of laboratory animals are carried out in such a way that they minimize distress to the animals.

The key elements used in judging if practices made during research is acceptable are: the likely benefits of the work must be weighed against the harms likely to be caused to the animals; it must be shown that there is no alternative means of achieving the purpose of the work; pain, distress and discomfort to the animals must be minimized.

The key principles for promoting the wellbeing of animals and the quality of scientific outcomes in Nigeria are Replacement, Reduction and Refinement, known as the **3Rs**. These principles aim to reduce the impact of scientific activities on animal wellbeing.

The 3Rs are defined as follows:

i. Replacement: If a viable alternative method exists that would partly or wholly replace the use of animals in a project, the Code requires investigators to use that alternative. Examples of alternative methods include in vitro techniques and computer models.

ii. Reduction: A project must be designed to use no more than the minimum number of animals necessary to ensure scientific and statistical validity. However, the principle of reducing the number of animals used should not be implemented at the expense of greater pain and distress for individual animals.

iii. Refinement: Studies must be designed to avoid or minimize both pain and distress in animals, consistent with the scientific objective. Investigators must also be competent in the procedures they perform. Project design must take into account: the choice of animals, their housing; management and care and their acclimatization; the choice of techniques and procedures; the appropriate use of sedatives, tranquilizers, analgesics and anesthetics; the choice of appropriate measures for assessing pain and distress; the establishment of early intervention points and humane endpoints; adequate monitoring of the animals; and appropriate use of pilot studies.

In spite of measures that have been theoretically put in place to ensure ethical practices in the use of laboratory animals in medical research in Nigeria, there are some problems which prevent proper implementation of ethical practice. The main problem faced here is inadequate funding of research institutions.

The cost of purchasing animals needed for research, feeding them regularly and keeping them in appropriate sanitary conditions is expensive. Many research institutions and universities in Nigeria lack adequate funding to support their research. The research however is very important to the training of students and staff. Therefore, unverified means are used in the acquiring of research animals including asking students to catch them and keep in containers, boxes, perforated bottles which may not even be safe for such animals. Reagents necessary to provide anesthesia before the beginning of certain procedures (such as dissection) are not available in required amounts, and so in some institutions, physiological tests and dissections are carried out without proper anesthesia. Sometimes, at the beginning of new projects, new animal colonies are set up and during the initial stage of the experimental studies, efforts are made to ensure proper maintenance of such colonies. However, as time goes on, funding for such projects may be withdrawn, and in the absence of wealthy private individuals to continue funding, such colonies are ignored. Animals there can then develop infections due to the development of unsanitary conditions and in some cases, animals escape too. This poses a great risk for the spread of anthro-po-zoonotic infections.

In order to cut cost of maintenance of animal colonies, inadequately trained staff are sometimes hired. These people are given basic rudimentary training on how to care for the animals and their environment, but are not trained for special situations like identification and management of sudden changes in health of such animals and how to protect themselves from contracting certain diseases.

It can be concluded that although bioethical guidelines are theoretically put in place for the use of laboratory animals in medical experiments in Nigeria, these measures are not put to full practice in all situations mainly due to lack of adequate funding. The researchers end up improvising as much as possible to ensure that they get some result (even if such results are not as trust worthy as they should be). The results obtained give an idea of the proper outcome of their experiments and are noted with respect to prevailing conditions that were observed during the experiments.

With the further development of the country, proper funding for research institutions will be provided to ensure standardization of all scientific procedures in the country.