

STUDENT'S PERSPECTIVES ON THE USE OF ANIMALS IN MEDICINE AND VETERINARY MEDICINE UNDERGRADUATE EDUCATION: AN EXPLORATORY STUDY

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Background

In the educational context of life and health sciences, animals are often a teaching-learning tool, namely in the undergraduate training of Medicine and Veterinary Medicine students, which involves important ethical considerations (Baldelli et al., 2019). The use of animals in education ranges from benign observation in their natural habitats, to dissection of dead animals, to highly invasive procedures performed on living animals. In science pedagogy it is commonly accepted that reducing the total number of animals used in teaching is necessary and ethically justified, but opinions differ as to whether their use can/should, or may not, be completely eliminated (Carroll, 2005; Jukes & Martinsen, 2007; Vemulapalli et al.,

2017; da Graça Pereira et al., 2017). It is our perception that students acknowledge that animals have an important role in education for continued improvement of human and animal health. However, an increasingly number of undergraduates is challenging the system, refusing to dissect animals or to perform other invasive procedures, when these practices compromise their ethical values. Veterinary and medical professionals have an increased responsibility in the supervision and promotion of respect for animal life and welfare, so there is continuous need for a careful and consensual reflection regarding the use of animals in the educational programs that lead to the graduation of these life science professionals.

Objectives

This research aims to characterize the use of animals in the undergraduate training of Integrated Master Degrees in Veterinary Medicine (MIMV) students from the Abel Salazar Institute of Biomedical Sciences - University of Porto (ICBAS-UP) and from the University of Trás-os-Montes e Alto Douro (UTAD) and of Integrated Master Degrees in

Medicine (MIM) students from ICBAS-UP and from the Faculty of Medicine of the University of Porto (FMUP). Additionally, we also aim to document the ethical, pedagogical and animal welfare perspectives of veterinary and medical undergraduate students regarding the use of animals exclusively for educational purposes

(excluding the clinical context in the case of MIMV).

Methods

A survey was developed by the authors with open and closed questions (likert scale and yes/no). Six major groups of questions were included, namely: 1) Sample characterization (number of respondents, gender, age, degree, institution); 2) The grade of agreement with the use of animals and which animals, exclusively for pedagogical purposes; 3) The curricular units that use animals, which animals, and types of procedures performed; 4) The degree of usefulness of including animals in classes; 5) Students' knowledge of possible alternatives to

the use of animals and willingness, or not, to implement them; 6) Possible contributions from students to improve or aggravate the welfare of animals used in their training. After approval by the Ethics Committee of "Centro Hospitalar São João" / Faculty of Medicine of the University of Porto (nº120/19), the questionnaire was distributed on paper to 180 undergraduate students of ICBAS and FMUP MIM and of ICBAS and UTAD MIMV. Statistical analysis was performed using the IBM SPSS software, version 26. The significance level considered was 0.05.

Results

The majority of questionnaires (139/180) were returned partially or fully completed, being the number of respondents determined for each question. At MIMV and MIM ICBAS and MIMV UTAD, 40 surveys were provided for each study cycle (90%, 35% and 90% response rate, respectively); in the MIM FMUP, a response rate of 88.3% was obtained after the dissemination of 60 questionnaires. Most students (n=86/131, 65.65%) agree to the establishment, maintenance and performance of animal procedures solely for educational purposes as a way of guaranteeing optimal acquisition of theoretical knowledge, attitudes and behaviors and technical skills (25.95% disagree and 8.4% has no opinion). Nevertheless, 64% of students (n=89/139) only agree to the use of some species (most protected animals are non-human primates and rodents, batrachians and fish are the most legitimated). Veterinary students are most in agreement with the use of animals for educational purposes compared to medical students ($\chi^2=18.967$, $p=0.001$; Mann-Whitney test $Z=-2.074$, $p=0.038$). A total of 65.5% of all

respondents (n=72/110) considered that the use of animals was useful for their learning outcomes but veterinary students found a greater usefulness in learning with animals than medical students (Fisher's exact test 29.690, $p<0.001$). The majority (n=73/126, 57.9%) of the students do not know alternative methods that could replace the use of live animals, or animals sacrificed for teaching purposes, in the classes they attended. MIMV students are more aware about alternative methods to animal use than MIM students ($\chi^2=18.855$, $p<0.001$); they have mentioned videos of invasive procedures, computer-based or computer-assisted programs, dissection of animals ethically obtained (not sacrificed for the purpose), plastination techniques, three-dimension models, training of clinical procedures such as venipuncture, sutures, physical exam, or others, in clinical environment. Most students (n=92/137, 67.15%) find that alternative methods should be used if the learning process is not compromised (15.33% consider that they should always be used).

Conclusions

Although further studies are required, the preliminary results here presented evidence

that most students assume a utilitarian and a relational ethical profile towards animals (only

18% agree with the use of all species for educational purposes), meaning that they consider animal use in pedagogical context ethically acceptable if the benefits outweigh the costs, provided that the refinement of animal procedures is ensured. It is the teachers'

responsibility to promote academic integrity in the use of animals, in order to contribute to the dissemination and implementation of equally efficient, but more ethical, humane and compassionate teaching methodologies in life sciences higher education.

References

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