

# Investigation and Analysis on Animal Experiment Ethics from the Perspective of Medical Students

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**Abstract.** By using self-designed questionnaire, 580 students in a medical college were surveyed, the purpose was to understand the current situation of medical students' experimental animal ethics education, found the main problems existing in the current medical college experimental animal ethics education, and discussed the methods to further improve the effect of animal ethics education.

## Introduction

Animal experiment is an indispensable means to train medical talents, but with the wide application of experimental animals, animal ethical issues are increasingly highlighted by [1]. How to carry out the idea of animal ethics in animal experiments, and seek the balance between training of experimental skills and the cultivation of life ethics, is an urgent problem to be solved in the current medical education field [2]. In order to understand the present situation of experimental animal ethics education in colleges and universities as well as the present situation of animal ethics and life ethics consciousness of medical students, the author conducted a questionnaire survey on the ethical knowledge of experimental animals in a college medical student.

## Object and Method

### The Object of Investigation

By using stratified sampling method, the students who set up an animal experiment project in a higher medical college, taking into account the factors of professional and grade, were taken into account by 580 students with 9 professional and 4 grades.

### Method and Content

Using the self-designed anonymous self-filled questionnaire, 580 questionnaires were issued and 534 valid questionnaires were collected, and the recovery rate was 92.1%. At the same time, the relevant laboratory teachers and ethics teachers were consulted and interviewed. The contents include: students' views on animal experiments, the understanding of the current situation of animal ethics education, and the cognition of the value of animal ethics education.

## Results and Analysis

### Students' Views on the Development of Animal Experiments

As to whether animal experiments should be carried out, most respondents said "support, but recommended to strengthen management", accounting for 74% of the respondents; but some of the respondents expressed different opinions and 15% believed that "all animal experiments are inevitable for human health and happiness." 11% of the respondents said they did not support any animal experiments because animals and human life were equally precious. The survey results show that most medical businesses are aware of the importance of animal experiments and support animal experiments, but most of them believe that management should be further strengthened.

## **Students' Understanding of the Current Situation of Animal Ethics Education**

### **Views on the Situation of Teachers' Classroom Education**

Whether the content of medical ethics curriculum involves the knowledge of animal ethics, and 40.7% of the students interviewed explicitly stated "no involvement". How can medical ethics courses help improve students' awareness of animal ethics? The survey showed that only 47.4% of respondents chose to "help a lot", and "slightly help" or "totally no help" accounted for 52.6%. The findings of these two questions indicate that the current medical ethics curriculum of the school lacks the education of students' animal ethics knowledge.

In animal experiment teaching, did the teacher emphasize the problems of animal ethics? The proportion of respondents who "frequently emphasized" accounted for 49.1%, while those who chose "occasionally emphasized" accounted for 39.9%, and 11% chose "never emphasized". Do students think that the experimental teachers themselves have better animal ethics consciousness in the experiment? It is considered that "yes" or "only part" accounts for 94.9%, but 5.1% of them choose "no". The above two problems show that most of the experimental teachers are able to embody a certain sense of animal ethics, and the positive education leads the students to lead by example, but some teachers do not play the role of educational guidance and representation.

### **Views on the Knowledge of Students**

When investigating the students' knowledge of animal welfare and relevant laws and regulations, the results of the investigation showed a severe form: 55.3% of the respondents who chose to "completely do not know" about the animal welfare knowledge were up to 47.4%. The survey data of these two questions indicate that medical students' knowledge of animal welfare is rather scarce at present, and the relevant laws and regulations do not even go deep into the public's mind.

At the same time, in depth analysis of the survey data, it is found that although senior students have more time in school and more contact with animal experiments, there is no corresponding increase in animal welfare knowledge and related legal knowledge, or even retrogression, such as the higher grade students choose to "completely do not understand" the laws and regulations, up to 65%, far higher than the average data. Can it be said that the ethical education of laboratory animals in schools has not played a proper role?

### **Views on the Overall Educational Effect of the School**

Only 16.7% of the respondents considered the effect of the experimental animal ethics education as "good", while up to 83.3% considered the effect "general" or "poor". What did the respondents think of the students' consciousness of animal ethics? The results of the survey showed that 12.5% of the respondents believed that the students' animal ethics consciousness was "strong", and that "general" accounted for 57.1%, and another 30.4% thought their consciousness was "weak". The results of these two questions show that most of the interviewees have a skeptical and even negative attitude towards the effect of the present school animal ethics education, and the animal ethics of medical students is still at a low level.

Since most of the respondents believe that students' ethical awareness of experimental animals is relatively poor, does that mean that students often show serious violations of animal ethics? But the survey showed that 72.7% of the respondents said they were "very careful" in animal experiments to minimize the pain of animals. 91.4% of the respondents chose to be "very cautious and even dare not to do it" in animal experiments, and 95.5% of the respondents said "there would be a heart if they were not careful to cause additional trauma to animals." Feel guilty and remind yourself to be careful.

The following three questions are to investigate the students' evaluation of their mood or attitude in animal experiments. The survey data show that students have better ethical awareness of animal ethics, but the conclusion is far from the results of the previous two questions. How do we explain the two self contradictory findings? This needs further research and analysis.

## **Students' Cognition of the Value of Animal Ethics Education**

### **Views on Behavior Contrary to the Ethics of Laboratory Animals**

For some of the cruelty animal incidents on the internet, most of the respondents showed good ethical awareness of animals, and 92.7% of the respondents chose "indignation of heart pain", but 7.3% of the respondents chose "fun stimulation" or "indifference". When asked if they had abused animals, most of them had "never had", accounting for 77.3% of the total number of respondents, and 22.7% of the respondents chose "many times" or "a few times".

The results of the above two problems show that most medical students are able to treat the behavior of animal abuse correctly, and also regulate their behavior, and show better animal ethical consciousness, which is basically consistent with the previous study on the attitude of the students to the animal experiment.

### **Views on the Relationship between Animal Ethics and Humanistic Spirit**

Should our so-called ethics be concerned with human beings and not animals? The survey shows that 91.6% of respondents choose "no", that is, the ethical category should also include animals. Does animal ethics belong to the category of humanistic spirit? Is there any connection between respect for animal life and respect for human life? The data show that up to 92.2% of the respondents chose "yes", that is, that animal ethics should belong to the humanistic spirit, and that "respecting animals is also respectful to life", that "no, animals and people are totally different" is only 3.9%. It can be seen that most medical students recognize the significance of animal ethics education to the cultivation of humanistic quality, which is in line with our other survey results: 94% of the respondents chose animal ethics education to be "helpful" to improve the humanistic quality.

Since respecting animals is respecting life, what do they think about animal cruelty? In addition to the previous findings, the overwhelming majority of people chose "heart pain", and 61.8% of the respondents believed that cruelty to animals was an external manifestation of the psychological problems of the perpetrator, and 64.4% of the respondents believed that maltreatment of animals would lead to violent tendencies of the perpetrator. For this reason, scientists have already confirmed that those children who used to abuse animals had violent tendency after growing up [3].

### **Anticipation of the Direction of the Development of Animal Ethics Education**

The students' attitude is affirmative for further emphasis on strengthening the ethical education of experimental animals: 83.3% and 81.1% of the interviewees that support "the promotion of experimental animal welfare in the experiment", "the school should strengthen the publicity and education of experimental animal welfare", and there are also 69.3% of the respondents. Indeed, "support schools to carry out similar activities such as silent visits to experimental animals".

More than half of the respondents considered it necessary to legislate for the protection of experimental animals, accounting for 64.7% of the total, 14% of the "unnecessary", and the other 21.3% "uncertain". The results show that there are still some people who are on the sidelines or even skeptical about animal legislation, which shows that the concept of animal ethics has not attracted enough attention from the whole society.

## **Thinking and Suggestion**

### **Improving the Standard of the System and Strengthening the Ethical Supervision**

At present, our country has promulgated the laws and regulations on the ethical review system, which has been fixed on every link of the review, and any animal experiment must be approved by the law. However, due to the late start, there are still many deficiencies in the protection of laboratory animals in China. Therefore, the school should set up a special laboratory animal ethics review committee to supervise the animal experiment "the qualifications of the researchers, the requirements of scientific ethics and the degree of risk", to standardize the use of experimental animals and to protect the rights of experimental animals[4]. The ethics committee should supervise and inspect all approved projects and play an effective role in protecting laboratory animals. All the

experimental researchers should voluntarily accept the supervision and audit of the ethics committee, internalize the protection of animals into their own moral consciousness, and learn to use the experimental animals scientifically, rationally and humanely.

### **Pay Attention to the Guidance of Education and Strengthen the Ethical Consciousness**

First of all, we should ensure the effect of classroom education. The ethics related knowledge of experimental animal ethics should be added to the teaching of ethical courses so that students can understand the ethical knowledge of experimental animals and relevant laws and regulations, set up the correct ethical concept of experimental animals, and pay attention to the students' ethical ideas of animals in the process of experiment, and remind the students to preview the steps in advance so as to be familiar with the steps. Operation to reduce injury, care and proper disposal of [5].

Secondly, we should pay attention to the guidance of the practice atmosphere. The school can hold lectures on ethical knowledge of experimental animals, preach ethical knowledge, build an ethical knowledge column for experimental animals, seize the first opportunity of the position, and hold an experimental animal thanksgiving ceremony to enlighten the heart. Through a variety of publicity and education activities, we should create an atmosphere of respecting and caring for animals.

### **Optimizing Experimental Procedures to Reduce Animal Damage**

Animal experiment institutions and researchers have the responsibility to actively carry out research and application of alternatives to animal experiments in accordance with the "3R" principle.

No injury items can be used instead of hurting items. For experimental purposes only to observe animal responses, video can be used to demonstrate the anatomical and physiological responses of animals. Computer technology can also be used to simulate animal body exercises and observation to reduce the use and harm of to experimental animals[6].

Low grade animals can be used instead of senior animals and small animals instead of large animals. For example, in the neurotoxicity test of poliovirus vaccine, transgenic mice can be used instead of primates, and rabbits, sheep and other animals can be replaced by rabbits in fracture experiments, shock experiments and other projects[7].

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