

VETERINARY STUDENTS' PERCEPTIONS ON ANIMAL WELFARE ANIMAL RIGHTS AND VEGANISM INFLUENCE THEIR CONSUMER PREFERENCES FOR PURCHASING ANIMAL PRODUCTS

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Abstract

In the last decades the concern of animal welfare has grown seriously among the consumers, thus changing their preferences on the use of products as food, clothes and other goods of animal origin. The aim of this research was to establish the preferences of native and foreign veterinary students in Bulgaria for purchasing products of animal origin, influenced by their perceptions on animal welfare strategy, animal rights movement and vegan position.

An anonymous written questionnaire was distributed among students at the two veterinary faculties established in the country. The respondents who took part in the survey were undergraduates from both the Bulgarian (BG n = 131) and English-language programme in veterinary medicine (EN n = 78), distributed by gender (BG female 77.86%, male 22.14%; EN female 62.34%, male 37.66%) and study year from the first to the fifth course. Data obtained were statistically processed (Statistica for Windows Software), subjected to frequency distribution, correlation analysis and t-test for independent variables. Values of $p < 0.05$ were considered significant.

Results showed that the majority of the respondents fully supported the internationally regulated Animal Welfare strategy - 97.71% of the Bulgarian and 100% of the English-speaking students. Meanwhile 83.21% of the native and 80.77% of the foreign undergraduates were well informed and shared the view that animals have rights to live free from human exploitation. Opposing against all kinds of products of animal origin appeared to be 17.56 % of the Bulgarian and 25.64% of the English speaking respondents. The study found that the professional knowledge influenced to some extent the students preferences as consumers, as 32.82% of the undergraduates in the Bulgarian programme and

24.37% in the English-language programme were willing to buy products derived under high standards of animal welfare, with another 13.74% of them (BG), respectively 11.54% (EN) being ready to pay higher prices for such animal-friendly products. Greater concern on the wellbeing of production animals was declared by 21.37% of the native and 10.26% of the foreign veterinary students, who preferred to buy products of animal origin under extensive breeding systems and organic farming.

The survey showed that the welfare of non-human animals was of a high concern both to the native and foreign respondents. Regarding their awareness on animal rights and main freedoms veterinary undergraduates were willing to buy food and goods of animal origin under high welfare production standards.

Key words: *Animal rights, Veganism, Production animals, Food from animal origin, Ethics.*

1. Introduction

The existing international legislative framework recognizes non-human animals as sentient beings and sets standards on animal welfare regarding breeding, transport, slaughter, and other forms of exploitation. As scientific research has unambiguously proven that animals have the ability to experience feelings, pain and suffering [9, 35, and 37], modern society as a whole is becoming more and more concerned with the wellbeing of farm animals [3, 8] used for deriving various products as food, clothes, cosmetics, etc. These concerns find different expressions - from willingness to pay higher price for improved animal welfare [1, 30], through buying organic and animal-friendly products

[6, 15], to choosing a vegan lifestyle without any animal-derived goods [23]. Scholars have found as well that the public attitudes towards animals are being determined by a complex of various motives including demographics, education, occupation, religious and health concerns [13, 14, and 41].

Non-human animals are among the essential resources which human beings depend on for their existence in direct and indirect way. Preservation of animal species, including their sustainable use, is a shared responsibility of many governmental and non-governmental organisations, among which veterinary professionals from both public and private sectors are granted the authority to take care of animal health and welfare [2, 31]. At the same time, veterinarians in their every-day life use different products of animal origin, as all other consumers. And as such, they are also subjected to studies on their consumer behaviour and animal welfare awareness, even at the stage of undergraduates [24, 26, 27, 28, and 36].

The present study explored the extent to which students in veterinary medicine in Bulgaria were aware of the main aspects of animal welfare and the popular among the public trends of veganism and animal rights. We explored as well how students' attitudes towards animals influenced their personal preferences on purchasing animal-derived products.

2. Materials and Methods

The survey was carried out under the form of an anonymous written questionnaire, distributed among students in veterinary medicine at Trakia University - Stara Zagora, and the University of Forestry - Sofia, Bulgaria. In the survey participation in the period October 2018 - May 2019 took undergraduates from both the Bulgarian (n = 131) and English-language programme in veterinary medicine (n = 78), from the first to the fifth year. Students from different courses were asked for their willingness to participate in the survey and those with positive answer were given a paper questionnaire to fill and return it to the author. Both the Bulgarian and English versions of the questionnaire were identical in content and formatting. The questions were related to: 1) Respondents' attitudes towards the use of animals for different purposes (food, clothing, research, etc.) - support for the welfare strategy for production animals, support for the animal rights movement, support for the vegan lifestyle without any use of animals, with a binary data outcome (yes/no) from each statement; 2) Preferences for use and purchasing products of animal origin with four different answers to choose from and additional combination of more than one of the statements.

The methodology of the empirical sociological survey was used for the preparation of the questionnaire [32]. Data obtained were statistically processed (Statistica v. 7 software, StatSoft, Inc.) and double-checked for accuracy. The Kolmogorov-Smirnov test was used for verification of normality of data distribution. The statistical software was used for descriptive statistics (frequency distribution tables), correlation analysis (Pearson correlation coefficient), Student's t-test for analyses of relationships between variables (t-test for independent samples, Levene's test $p < 0.01$), Chi-square test for analyses of associations between variables. A two-sided $p < 0.05$ was considered to be statistically significant. The results afterwards were presented on diagrams (Excel, Windows 10).

3. Results and Discussion

3.1 Results

The survey among the students in veterinary medicine in Bulgaria showed that they were aware and had knowledge on the main aspects regarding wellbeing of non-human animals and the most important "five freedoms" which assured that animals were properly kept, bred, and exploited throughout their lifespan. These "five freedoms" as core elements of the internationally legally regulated Animal welfare strategy, were supported by 97.71% of the Bulgarian and 100% of the English-speaking students (Figure 1).

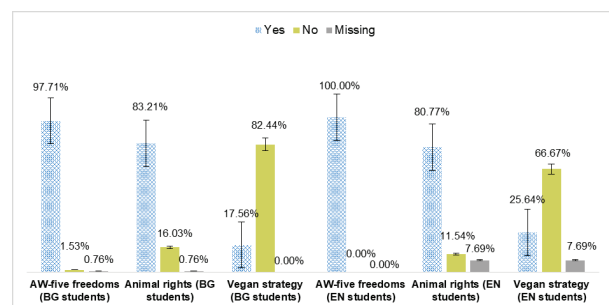


Figure 1. Veterinary students' attitudes towards wellbeing and use of animals

(Support to: Animal welfare strategy; Animal rights position; Vegan strategy); Std. error presented on error bars

With the emergence of evidences on animal sentience and the establishment of animal rights movement worldwide, the public awareness expanded beyond the main welfare freedoms. The activists of the mentioned movement stated that non-human animals ought the right to live free of human intervention. This position was shared by 83.21% of the native, and 80.77% of the foreign respondents in the survey. In opposition of all kinds of animal exploitation appeared to be 17.56 %

of the Bulgarian and 25.64% of the English speaking veterinary students who supported the vegan strategy to live without using any products of animal origin. Although weak, the survey found a positive correlation among the group of the respondents who supported the Animal welfare strategy and the group of those who uphold the Animal rights position ($r = 0.19, p < 0.05$). The same correlation was found between the two groups of the Animal rights and the vegan lifestyle supporters, respectively ($r = 0.19, p < 0.05$).

Analyzing the influence of the nationality on the students' perceptions on animal wellbeing, the Student's t-test found a significant difference in favor of the veterinary undergraduates in the Bulgarian language programme and the respondents who shared the view that non-human animals have the right to live free from human exploitation ($t[209] = 5.338, p = 0.000$).

Female respondents (BG female 77.86%, EN female 62.34%) represented the majority of the participants in the survey for both programmes, compared to the male students (BG male 22.14%; EN male 37.66%) (Table 1). The undergraduates' distribution by academic year of study also varied among the courses.

Even weak, positive correlation was found among the female respondents and the undergraduates who supported the Animal rights position ($r = 0.26, p < 0.05$). Significant differences were found, supposing women were more aware on the right of non-human animals to live without human interventions (female students $n = 131$; total percent from all respondents 65.17%), ($\chi^2 = 10.344, p = 0.001$). At the same time, positive correlation was found again between the year of study and the respondents' attitudes on animal rights ($r = 0.42, p < 0.05$). The course year significantly affected the students' perceptions on animal sentience as at earlier stage of their veterinary medicine education (first and second year) the respondents showed greater concern on animal rights and wellbeing ($\chi^2 = 30.967, p = 0.000$).

Regarding the stated attitudes on keeping and exploiting animals for human needs, the study investigated the respondents' preferences on the indicator "use of products of animal origin (food, cosmetics, leather goods, clothes etc.)" (Figure 2). The data showed that preferences for products obtained in compliance with high animal welfare standards

(e.g. eggs from free-ranging "happy" hens) in intensive livestock breeding systems were declared by 32.82% of the Bulgarian students compared to 24.37% of the foreign veterinary undergraduates. Smaller shares got the respondents who preferred products from organic livestock farming (including naturally breeding animals under extensive systems) - 21.37% of the Bulgarian and 10.26% of the English-speaking students. The willingness to pay a higher price for products obtained in systems under high animal welfare standards was stated only by 13.74% of the native undergraduates, compared to 11.54% of the foreign English-speaking students. Greater concern on the wellbeing of production animals was declared by 5.34% of the Bulgarian and 11.54% of the English-language veterinary students, who preferred to consume only excessive products like milk and eggs, with the aim to eliminate the necessity of slaughtering animals for obtaining products from them.

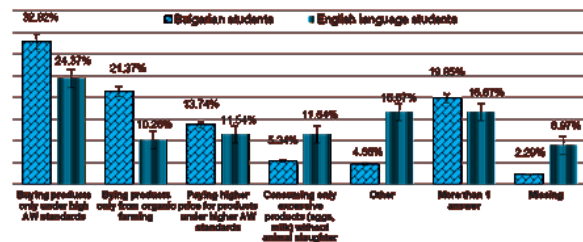


Figure 2. Veterinary students' preferences for purchasing products of animal origin;
Std. Error presented on error bars

A significant difference in the Bulgarian female students' preferences for the use of animal products was found, as Student's t-test showed women would choose products derived under organic and/or extensive farming ($t[131] = -9.637, p = 0.000$). For comparison, the female undergraduates from the EN programme appeared to be significantly more willing to pay higher price for animal friendly-products ($t[77] = -9.034, p = 0.000$).

Yet, students at earlier study years in the English-language programme were significantly more likely to indicate their consumers' willingness to pay for improved animal welfare through buying more animal-friendly products ($t[72] = -3.001, p = 0.000$).

Table 1. Gender and academic year differences in the students' profiles

Respondents	Gender				Study year						
	Female %	Male %	Mean	Std. Dev.	First %	Second %	Third %	Fourth %	Fifth %	Mean	Std. Dev.
Students BG (n = 131)	77.86	22.14	1.22	±0.42	40.46	19.08	18.32	1.53	20.61	2.43	± 1.54
Students EN (n = 78)	62.34	37.66	1.38	±0.49	40.28	2.78	37.5	1.39	18.05	2.54	± 1.48

The survey tried to investigate the influence of the students' attitudes to animal wellbeing and exploitation on their preferences for use of animal-derived products, as well. The Student's t-test found a significant difference in favour of the veterinary undergraduates who support the Animal welfare strategy and those who are ready to pay a higher price for more animal-friendly products ($t[208] = -15.383$, $p = 0.000$). The same significant results were obtained for the group of the respondents who uphold the Animal Rights position ($t[202] = -13.901$, $p = 0.000$) and the group of students who opposed the Vegan Strategy, respectively ($t[203] = -9.213$, $p = 0.000$).

3.2 Discussion

Given the authority to treat animals and improve their health and wellbeing, veterinarians are among the professionals who have to constantly update and broaden their understanding of the new and emerging welfare concepts for the benefit of the animals, owners, consumers and society as a whole.

Basic knowledge in Animal welfare concepts was recommended to be provided within the undergraduate course for the veterinary students [31]. It appeared, therefore, a subject of interest to the researchers to investigate and measure the undergraduates' understanding of the framework which addressed the issues how animals were bred, raised, kept, used, transported, and slaughtered. A similar survey was conducted by Pirrone *et al.*, [36], among Italian veterinary students investigating differences in attitudes to animals and animal welfare issues through Animal attitude scale (AAS). The authors reported the participants in their survey showed pro-animal welfare attitudes, being somewhat supportive or neutral about eating of food of animal origin (50.70% of the respondents). Attitudes towards Animal welfare were investigated also among Croatian veterinary students [33], British undergraduates [34], and Italian and Spanish veterinary students [26, 27]. All the authors found a significant concern for animal welfare regarding different use of animals in various activities (as research, education, production, entertainment and others) with many factors influencing the respondents' attitudes like age, gender, and year of study. In our survey students' perceptions were formed by their views on the five freedoms strategy, animal rights and veganism, and nationality as well. Gender and year of study also affected their attitudes as female students and undergraduates in the earlier preclinical stage showed greater concern on the wellbeing of animals and their rights to live free from exploitation ($p < 0.01$). These findings were in consistence with the results of previous studies among veterinary undergraduates [5, 17, 26, 27, 33, 34, and 36] and veterinary practitioners

and faculty members [22, 40]. The authors reported that attitudes towards animal welfare as a whole were associated with heterogeneous factors from the respondents' demographic, educational and personal characteristics. This complex notion appeared to be in line with our findings for the veterinary undergraduates whose perceptions on the right of animals to live free from human exploitation were significantly influenced by their nationality in favor of the students in the Bulgarian programme ($p < 0.01$).

The empathy to non-human animals, expressed through the respondents' supportive positions on animal welfare strategy, animal rights and veganism, was hypothesized to affect also the attitudes of the participants in the survey towards use of animal-derived products. Significant differences were found for both groups of veterinary undergraduates with high awareness on the five freedoms strategy and animal rights movement respectively, and their willingness to pay for more animal-friendly products (13.74% of the Bulgarian and 11.54% of the English-speaking students). These ethical motives were found to be part of the factors influencing the Australian, Mexican and European consumers' purchasing decisions [4, 5, 12, 29, and 38] based on moral and environmental concerns. However, the global demand for products under high animal welfare standards seemed to be affected not only by the animal wellbeing issues, but by other factors as food safety concerns, consumers' cultural, educational, religious, economic and social status. Regarding the meat and egg markets customers sought the balance between quality and price [4], food safety guarantee [19, 43] and initiatives for animal welfare improvement [11, 18, 21, and 25].

Meat consumption appeared to be an ethical paradox among the consumers who upheld the vegetarian and vegan position and thus linked animal products with poor animal wellbeing and cruelty [10, 39, and 42]. In fact, consumer segments varied significantly in their attitudes towards animal production. Janssen *et al.*, [23], argued that one-third from the participants in their survey who followed a vegan diet might have positive attitude to forms of animal agriculture guaranteeing animal welfare standards going beyond current practices. Such forms could be extensive breeding of production animals and organic farming. In consistence with this position, a certain proportion of the Bulgarian (21.37%) and foreign veterinary students (10.26%) in the present study declared willingness to buy only organic animal-derived products. Another 5.34% of them (BG students), respectively 11.54% (EN students) would consume only excessive products like milk and eggs without killing animals for food. Similarly, Slovak veterinary undergraduates also showed interest in organic food consumption from a vegetarian point of view [28]. Again, animal rights issues stayed behind

the motives for the consumers' choice of organic food [20], and "greener" animal-friendly products [7, 16].

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4. Conclusions

- Taking into account the multi-layered character of the veterinarian's duties to animals and society, the present study investigated how the veterinary students' perceptions on animal welfare, animal rights and veganism shaped their attitudes towards purchasing animal-derived products.

- Results showed that the welfare of non-human animals was of a high concern to the respondents, both in the Bulgarian and English-language programme in veterinary medicine. Regarding their awareness on animal rights and main freedoms veterinary undergraduates were willing to buy food and goods of animal origin under high welfare production standards. Respondents with greater concern were ready, at least in theory, to pay more for animal-friendly products and improved animal wellbeing, and as an alternative to choose products from organic farming.

- The results from the study indicated that a considerable level of concern toward the welfare of animals used for production is present in the segment of veterinary students in the country.

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