An evaluation on research and publication ethics policies of journals publishing in the field of veterinary sciences in Türkiye

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ABSTRACT

The research quality and publication of journals in any field are crucial because they show the development in the field. This study aimed to examine the research and publication ethics policies of the professional journals that continue to publish in the field of veterinary sciences and reveal the current situation. In this study, journals publishing in the field of veterinary sciences were searched through DergiPark, Web of Science database, and their websites. The features of these journals, the indexes in which they are indexed, statements about research-publication ethics, and the national and international academic institutions were gathered under appropriate headings. The obtained data were analyzed using descriptive statistical techniques such as frequency and percentage. Moreover, 11.5% (*n* = 3) of the veterinary journals in Türkiye were indexed in SCI-E, 3.8% (*n* = 1) were indexed in E-SCI, 57.7% (*n* = 15) were university journals, 42.3% (*n* = 11) published two issues per year, and 57.7% (*n* = 15) of journals had publication languages as Turkish and English. Therefore, the number and quality of publications in journals in veterinary sciences have increased in recent years. They comply with "national peer-reviewed journal" criteria and the COPE and ICMJE criteria, wherein the TR index, one of the most comprehensive scanning platforms in Türkiye, has also adopted their principles in several parameters. However, there is no common standard for journals.

Introduction

Science is an indispensable element for society's progress. It aims to reach the scientific knowledge, present the knowledge produced and developed to the scientific world, ensure that it is widely spread and used for the benefit of humanity, and open it for questioning and criticism as much as possible. Research and publication facilitate in spreading knowledge of science (2, 8).

The transmission of information obtained from scientific research to the relevant audience is known as the homestretch of the scientific method (37). When research is completed, either new scientific information is obtained, or the correctness of its assumptions is borne out, and the research is converted into publication and shared with the scientific world (27, 53). It is the necessity of the age to share the scientific information produced through appropriate tools such as scientific journals to reach large masses (38). Scientific publishing is crucial for the proliferation of scientific knowledge and opening it to discussion, and making new scientific contributions (1). The most effective way to spread scientific knowledge to the scientific world is by publishing it in scientific journals (54). Journals play a crucial role in exchanging scientific information by converting scientific knowledge into literature. Scientific periodicals, the most crucial means of publication in sharing scientific knowledge, are making rapid progress in Türkiye (41, 44). As it facilitates access to academic information produced in Türkiye, the visibility of the journal increases. There is an "index" accepted by the Council of Higher Education (CoHE) and the Inter-university Council (IUC) for appointments and promotions known as TR Index, where journals want to be included (52).

As a conciliatory activity with broad socio-political implications, science is open to ethical issues and opposing ideas (42). Science and ethics are evaluated as a whole. Ethical criteria are crucial in presenting research and publications made in the scientific world with integrity to the public (2). It is extremely crucial to comply with the principles of scientific research and publication ethics at all stages of the process from the design of the study to the accuracy and completeness of the information in the publication, production, and development of information for reporting, publishing, and reaching to the reader in a scientific publication (27). In this study, researchers, editors, editorial boards, and referees have crucial responsibilities (1, 2, 27). Scientific research is evaluated together with publication ethics. It is essential to protect academic values such as academic integrity, adherence to professional standards, impartiality, clarity, reliability, and transparency in the writing, presentation, and sharing of research results with the public (27) for a scientific publication to be considered ethically reliable. Moreover, it is necessary to adhere to scientific values during the writing process (37).

The most accurate indicator of the development of a profession is journal values (45). After veterinary schools were started, professional organizations were established to solve the professional and other problems of veterinarians who graduated from these schools (46). To be benefitted from these established associations, journals began to be published as publication organs in the mid-19th century for the scientific and social development of the profession. The first periodical in veterinary medicine in Türkiye was the journal "Vasıta-i Servet," which included articles on agriculture and began its publication life in 1880. The first scientific professional journal in veterinary medicine is known as "Mecmua-i Fünûn-i Baytariye," which was started in 1908 (17, 20).

Since the 1970s, there has been a considerable increase in the number of academic journals in all fields of science in Türkiye (28). Similarly, the number of academic journals increased in the veterinary sciences, and along with several institutions, organizations, and nongovernmental organizations operating in the veterinary field, faculties, vocational schools, and institutes have started to publish research to spread their studies to wider audiences. By the 2000s, dozens of journals were reported to be published in veterinary medicine (40).

The study aimed to examine the research and publication ethics policies of the journals that continue to publish in the field of veterinary sciences in Türkiye as of 2021 and present the current situation regarding these journals.

Materials and Methods

The study's material included veterinary sciences journals that published in Türkiye as of June 2021 and for at least one year in the field of veterinary sciences. The journals to be included in the study were searched using the keywords "veterinary," "animal," "livestock," and "agriculture" through DergiPark and the Web of Science (WoS) databases. The journals not available in the DergiPark and WoS databases were accessed through the internet search engine using the "veterinary journal" keyword, and the relevant information was obtained through their websites. A total of 26 journals were obtained using the mentioned keywords through the DergiPark and WoS databases and the internet search engine.

The journals that are actively publishing in the field of veterinary sciences, the characteristics of these journals, the indexicals in which they are indexed, the statements about research and publication ethics that they include in their publication policy, and the national and international academic institutions of which they are members were identified. Data on research and publication ethics were obtained from DergiPark for the journals that are included in their system, and for those journals that are not included in the DergiPark system, their websites were used by examining "Ethical Principles and Publication Policy, Ethics Policy, Publication Policy, Copyright Transfer Agreement, Conflict of Interest Statement, About the Journal, Authorship Rules, Author's Responsibilities, Information for the Authors, and Ethical Statement in Research with Animals" sections.

The content analysis method was used for the obtained data (58). In addition, the data were analyzed using descriptive statistical techniques such as frequency and percentage. The statements of journals on research and publication ethics were collected under 27 headings, and the national and international academic institutions/databases considered by the veterinary sciences journals examined were collected under 11 headings and presented in detail in tables in the findings section. The works of Yılmaz Gören and Yalım (59) and Aydın (6) were also used for making tables.

Results

In this study, a total of 26 journals that continue to publish as of June 2021 and in the field of veterinary sciences have been identified. Of these journals, 15 were accessed through DergiPark, three through WoS, and five from both DergiPark and WoS databases; three journals that were not available in the DergiPark and WoS databases were accessed through their websites. The findings regarding the veterinary sciences journals examined in this study are presented in Table 1. Moreover, all the journals examined were open access.

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Table 1. Veterinary sciences journals reviewed within the scope of the research.

Journal Name	Beginning Date of Publication **	Publisher	Publication Language	Number of Publications (Year)	Accessed Database
Journal of the Turkish Veterinary Medical Society	1930	Association	Turkish-English	2 Issues	DergiPark
Ankara Universitesi Veteriner Fakultesi Dergisi	1954	University	English	4 Issues	DergiPark-WoS
Livestock Studies*	1959	Institution	English	2 Issues	DergiPark
Journal of Etlik Veterinary Microbiology	1960	Institution	Turkish-English	2 Issues	DergiPark
Journal of Research in Veterinary Medicine*	1981	University	Turkish-English	2 Issues	DergiPark
Eurasian Journal of Veterinary Science*	1985	University	Turkish-English	4 Issues	WoS
Van Veterinary Journal	1990	University	Turkish-English	3 Issues	DergiPark
Journal of the Faculty of Veterinary Medicine, Kafkas University	1995	University	English	6 Issues	WoS
Turkish Journal of Veterinary and Animal Sciences	1996	Institution	English	6 Issues	DergiPark-WoS
Acta Veterinaria Eurasia*	2002	University	English	3 Issues	WoS
Journal of Faculty of Veterinary Medicine Erciyes University	2004	University	Turkish	3 Issues	DergiPark-WoS
Atatürk University Journal of Veterinary Sciences	2006	University	Turkish-English	3 Issues	DergiPark
Journal of Istanbul Veterinary Sciences*	2007	Institution	English	3 Issues	DergiPark
Dicle University Journal of Faculty of Veterinary Medicine	2008	University	Turkish	2 Issues	DergiPark
Kocatepe Veterinary Journal	2008	University	Turkish-English	4 Issues	DergiPark
Fırat University Veterinary Journal of Health Sciences*	2009	University	Turkish-English	3 Issues	Website
Turkiye Klinikleri Journal of Veterinary Sciences	2010	Private	Turkish-English	2 Issues	Website
Bulletin of Veterinary Pharmacology and Toxicology Association	2010	Association	Turkish-English	3 Issues	DergiPark
Animal Health, Production and Hygiene	2012	University	English	2 Issues	DergiPark
Harran University Journal of the Faculty of Veterinary Medicine	2012	University	Turkish-English	2 Issues	DergiPark-WoS
Journal of Bahri Dagdas Animal Research	2014	Institution	Turkish-English	2 Issues	DergiPark
Journal of Advances in VetBio Science and Techniques	2016	Private	Turkish-English	3 Issues	DergiPark
Veterinary Journal of Mehmet Akif Ersoy University	2016	University	Turkish-English	3 Issues	DergiPark-WoS
Turkish Journal of Veterinary Research	2017	Private	English	2 Issues	DergiPark
International Journal of Veterinary and Animal Research	2018	Private	English	3 Issues	Website
Turkish Veterinary Journal	2019	University	Turkish-English	2 Issues	DergiPark

* These journals are given in the table with their current names, **Journals are listed in the table in chronological order.

Moreover, 57.7% (n = 15), a significant part of the journal, were of the faculty of veterinary medicine (university journals); 57.7% (n = 15) were published both in Turkish and English, and 42.3% (n = 11) published two issues per year (Table 1). Moreover, among the journals examined, 65.4% (n = 17) were indexed in TR Index, 50.0% (n = 13) in Türkiye Citation Index, 23.1% (n = 6) in Zoological record, 11.5% (n = 3) in Science Citation Index-Expanded (SCI-E), and 3.8% (n = 1) in Emergency SCI (E-SCI) (Table 2).

While evaluating the content of the research and publication ethics policies of veterinary sciences journals, the statements identified in research and publication ethics were discussed under 27 headings and presented in Table 3. National and international academic institutions/ databases are considered by the veterinary sciences journals examined within the scope of the research presented in Table 4.

Table 2. Indexes of veterinary sciences journals examined within the scope of the research.

	Indexes*	**N**	**%**
1.	TR Index	17	65.4
2.	Google Scholar	14	53.8
3.	Turkey Citation Index	13	50
4.	Cab Abstracts	10	38.5
5.	ResearchBib	10	38.5
6.	EBSCO/EBSCOhost	7	26.9
7.	COSMOS/COSMOS IF	6	23.1
8.	Index Copernicus	6	23.1
9.	Zoological Record	6	23.1
10.	ELSEVIER – Scopus	5	19.2
11.	CABI/CABI full text	5	19.2
12.	Eurasian Scientific Journal Index	5	19.2
13.	CrossRef	3	11.5
14.	DOAJ	3	11.5
15.	SCI-E	3	11.5
16.	Bielefeld Academic Search Engine (BASE)	2	7.7
17.	E-SCI	1	3.8

*In the examination made through the DergiPark and WoS database and the website of the journals that are not in this database, the data specified for each index were obtained by the journals' own declarations.

Table 3. Statements regarding research and publication ethics in veterinary sciences journals examined within the scope of the research.

	Statements Regarding Research and Publication Ethics	**N**	**%**
1.	Plagiarism	23	88.5
2.	Copyright and License	22	84.6
3.	Confidentiality	21	80.8
4.	Acknowledgment	20	76.1
5.	Reader Information	20	76.9
6.	Conflicts of Interest	20	76.9
7.	Responsibility	20	76.9
8.	Research Ethics Committee Approval	20	76.9
9.	Duplication	18	69.2
10.	Supporting Institutions and Organizations	17	65.4
11.	Submission to the Multiple Journals	17	65.4
12.	Originality of the Study	17	65.4
13.	Contribution Notice	17	65.4
14.	Fake Data (Fabrication)	12	46.2
15.	The Timeliness of the Data	11	42.3
16.	Copyright Declaration Form	11	42.3
17.	Similarity	11	42.3
18.	Informed Consent/Elucidating	9	34.6
19.	Animal Welfare and Protection	9	34.6
20.	Animal Rights	8	30.8
21.	Inappropriate Authorship (Gift/Ghost Authorship)	7	26.9
22.	Non-Returning of Unpublished Manuscripts to the Author	6	23.1
23.	Citation Manipulation	6	23.1
24.	Reliability	4	15.4
25.	Ministry Permission for Studies on Wildlife	2	7.7
26.	Ministry Permission for Notifiable Diseases	1	3.8
27.	Patent and Trademark Rights	1	3.8

Table 4. National and international academic institutions/databases are considered by the veterinary sciences journals examined within the scope of the research.

	Journal name	WAME	COPE	ICJME	CC	HELSINKI	CSE	EASE	NISO	ECoC	ORI	CIOMS
1.	Journal of the Turkish Veterinary Medical Society	+	+	+	+		+	+	+			
2.	Ankara Universitesi Veteriner Fakultesi Dergisi		+		+					+		
3.	Livestock Studies				+							
4.	Journal of Etlik Veterinary Microbiology		+		+		+				+	
5.	Journal of Research in Veterinary Medicine		+	+	+							
6.	Eurasian Journal of Veterinary Science			+	+							
7.	Van Veterinary Journal	+	+	+	+							
8.	Journal of the Faculty of Veterinary Medicine, Kafkas University		+		+							
9.	Turkish Journal of Veterinary and Animal Sciences			+	+							
10.	Acta Veterinaria Eurasia	+	+	+	+	+	+	+	+			
11.	Journal of Faculty of Veterinary Medicine Erciyes University				+							
12.	Atatürk University Journal of Veterinary Sciences				+							
13.	Journal of Istanbul Veterinary Sciences	+	+	+	+							
14.	Dicle University Journal of Faculty of Veterinary Medicine		+			+						
15.	Kocatepe Veterinary Journal											
16.	Fırat University Veterinary Journal of Health Sciences											
17.	Turkiye Klinikleri Journal of Veterinary Sciences	+	+	+	+		+	+				
18.	Bulletin of Veterinary Pharmacology and Toxicology Association		+		+							
19.	Animal Health, Production and Hygiene				+							+
20.	Harran University Journal of the Faculty of Veterinary Medicine		+		+							
21.	Journal of Bahri Dagdas Animal Research											
22.	Journal of Advances in VetBio Science and Techniques	+	+	+	+		+	+	+			
23.	Veterinary Journal of Mehmet Akif Ersoy University		+	+	+							
24.	Turkish Journal of Veterinary Research	+	+	+	+							
25.	International Journal of Veterinary and Animal Research		+		+							
26.	Turkish Veterinary Journal											

WAME: World Association of Medical Editors, COPE: Committee on Publication Ethics, ICJME: International Committee of Medical Journal Editors, CC: Creative Commons Attribution 4.0 International License, CSE: Council of Science Editors, EASE: European Association of Science Editors, NISO: National Information Standards Organization, ECoC: European Code of Conduct for Research Integrity, ORI: Office of Research Integrity, CIOMS: Council for International Organizations of Medical Science.

Discussion and Conclusion

In some cases, unethical issues may come up in scientific publications, such as plagiarism, fabrication, falsification, duplication, salami slicing, author rights issues, biased selection of references, biased publication, no acknowledgment, and conflict of interests (27).

In case of plagiarism, the authors quote without citing or present the reference as their study by not complying with the determined standards (19); citations that exceed acceptable limits are unethical, and the freedom to cite never means freedom to steal (27). Plagiarism in electronic publications is much more serious than in printed publications because of the ease of downloading, copying, and pasting (14). It is reported that 20% of the applications made to the "Office of Research Integrity" in the USA have allegations of plagiarism (55). In a study conducted to determine the opinions of the editors on publication ethics of the journals included in "The Scientific and Technological Research Council of Türkiye (TUBİTAK) Turkish Medical Index," the rate of

"publishing information, examples, cases or data belonging to others without permission and without being cited" is 20.6% (1). In a study conducted by Wager and Williams (56) on why journals rejected articles between 1988 and 2008, 16% (n = 312) of the articles were reported to be retractions because of plagiarism, and some journals even banned authors who made plagiarism or unnecessary publications. Therefore, this issue is an extremely crucial ethical flaw; 88.5% (n = 23) of the journals examined in this study also emphasize the issue of "plagiarism" (Table 3), and they try to both eliminate possible ethical flaws and have the necessary standards in terms of publication ethics.

Although there is a "recommendation" in the TR Index criteria as "using a plagiarism program and announcing it in the journal and/or web page," there is no clear statement regarding the plagiarism rate (51). Therefore, with the programs used to detect plagiarism, a total similarity rate (similarity index) of 20% according to some editors and 10% according to others is accepted as the limit of plagiarism (26). Articles 9 and 22 of the "Graduate Education and Training Regulation," which came into force after being published in the Official Gazette on April 20, 2016, included a provision regarding the plagiarism reports of master's and doctoral theses and a rate of 15% excluding citations and 30% including citations were accepted (35). Considering that scientific studies on a similar topic can be similar, particularly in the literature, it is objectionable to report plagiarism on studies that are similar to other studies by only looking at the results obtained from plagiarism programs (50). We found that 42.3% (n = 11) of the journals evaluated in this study focused on similarity. On reviewing for the main text of the study for "plagiarism policy, ethical issues, evaluation processes, and principles" of some journals, it was stated that the similarity rate should not exceed 15%-25% in general; the articles with a similarity rate between 15% and 25% are returned to the relevant author or requested to be corrected by the author, and those exceeding 25% are rejected for being weak in terms of originality and contribution to the field. Sometimes, the same title is sent again without making changes, and thus, similarity exceeding 50% may cause the author to be banned from the journal, and future submissions of the authors may not be considered for publication. In addition, inconsistent with the statement of Toplu (50), a clear distinction should be made between the two as the similarity criteria are different from plagiarism, and journals should set the standard limits, such as the percentages determined for master's and doctoral theses and this determined similarity rate should not be considered plagiarism.

The "Committee on Publication Ethics" (COPE), "Directory of Open Access Journals" (DOAJ), and "World Association of Medical Editors" (WAME) are academic organizations that are experiencing an increase in membership applications and a wide variety in quality. Compliance with the "Best Practice Guidelines" (The Best Practice Guidelines for Journal Editors) of journals is not required. These principles are mostly recommendations developed as guides in complex ethical situations upon requests from editors (15, 18). COPE advises editors and publishers on all aspects of publication ethics and specifically on the handling of research and publication abuse cases. In addition, COPE provides a forum for its members to discuss individual cases. Simultaneously, DOAJ aims to establish, maintain, and develop a reliable source of information about open-access scientific journals on the web (18). The "International Committee of Medical Journal Editors" (ICMJE) determines the standards required for articles submitted to biomedical journals (23). In Türkiye, TR Index has journal evaluation criteria for scientific articles sent to journals to consider the ICMJE recommendations and COPE's "International Standards for Editors and Authors." In addition, in the TR Index, detailed information on open access regarding the journal publication process and policy should be included under the title of "publication policy" (51). When the current status of open access of journals examined was evaluated, we found that all articles of these journals are open access, and 12% (n = 3) of them are indexed in DOAJ (Table 2). In addition, when the COPE (n = 16), WAME (n = 7), and ICMJE (n = 11) memberships of the journals were evaluated (Table 4), journals that are not members of these organizations need to make more efforts, and this number should increase within the scope of "Transparency and Best Practice Principles in Scientific Publishing."

In the "Law on Intellectual and Artistic Works" (LIAW), the improper use of a citation without the written consent of the right holders is considered an "unlawful act" and the penalties and liabilities to be applied are mentioned in Article 71 of the Law (30). Creative Commons Licenses provide a standard way to provide everyone, from individual creators to large institutions, permission to use their creative work under the copyright law. It allows the user to learn the terms of using the work without contacting the copyright owner (9). Copyright regulations must be complied with for the intellectual and artistic works used (51). However, the "copyright" problem is more serious, particularly in e-publications than in printed journals (14). In a study on the research and publication ethics policies of national nursing journals, 26.6% (n = 4) of the journals refer to the issue of "citation permission" in their publication policies (59). In a study examining the opinions of academicians on research and publication ethics, 50.4% (n = 137) of the participants believed that ethical faults are committed on issues such as "inappropriate citation" (39). A study revealed that

80.8% (n = 21) of the journals provided content information for "CC License," 84.6% (n = 22) for "Copyright and License," and 23.1% (n = 6) for "Citation Manipulation" (Table 3); therefore, the journals that publish in the field of veterinary sciences in Türkiye emphasize on "CC License" and "Copyright and License" by their publication policies. In addition, it is necessary to give more place to "Citation Manipulation" in publication ethics policies by showing the same sensitivity for complying with the TR Index journal evaluation criteria and LIAW, aiming to protect the rights of the authors of the cited sources and to be a solution to the copyright problem that can be seen more frequently in e-publications.

According to the ICMJE, when submitting an article with multiple authors, the corresponding author should clearly state the order of the authorship (23). COPE recommends adopting policies that allow transparency about the extent to which authors contribute to the study (10). According to TR Index, the contribution rate and conflict statements of researchers should be included at the end of the article (51). On the other hand, the "Turkish Academy of Sciences" (TÜBA) states in its report that clearly stating possible contributions to the project in experimental studies will minimize the ethical problems that may arise regarding the order of the author (53). In an international study by Broome et al. (7), in which academicians refereeing in journals published in the field of nursing participated, 23% of the participants were concerned about a conflict of interest at least once, and 92% of them reported this to the editor. In a study in which, the opinions of research assistants about the difficulties they encounter regarding research and publication ethics and their self-efficacy were investigated, it was found that the participants had difficulties in expressing themselves while determining the order of authors in the article (29). On the basis of this, 76.9% (n = 20) of the journals considered in this study mentioned the issue of "conflict of interest" (Table 3), which should not be missed in the research data as it is a crucial step and is necessary to prevent wrong evaluations. In addition, this situation is considered and meets the ICMJE, COPE, TÜBA, and TR Index criteria.

In the "Higher Education Institutions Scientific Research and Publication Ethics Directive," the "republishing" conditions are handled meticulously (48). Moreover, COPE disapproves "over-publishing (or double, duplication)," which means reprinting a publication that has been published via print or electronic media and coincides with its other edition (10). It is stated that the relevant author must sign the "Copyright Form" to ensure that the article is an original work, has not been published before, and is not intended to be published elsewhere in its final form in print or electronic form (21). In a study conducted to determine the opinions of journal editors on publication ethics, the rate of "publishing a publication in more than one journal" is 19.6%, and the rate of "publishing a study in both Turkish and a foreign language" is 8% (1). In a study examining the views of nursing doctoral students on research ethics, the rate of "writing more than one article using the same data" behavior was 22.8%, and the rate of witnessing this behavior was 56.1% (22). In this study, the theme of "duplication (republishing)" was 69.2% (n = 18), and the proportion of journals that included the themes of "originality of the study" and "submission to more than one journal" was 65.4% (n = 17) (Table 3). This indicates that the journals publishing in the field of veterinary sciences largely complies with the framework rules determined by the CoHE and COPE and show sensitivity to preventing duplication.

In the Scientific Research and Publication Ethics Directive of CoHE, the expression "not complying with ethical rules in research on humans and animals" is included as action against scientific research and publication ethics (48). According to TR Index journal evaluation criteria, approval from the ethics committee should be obtained for studies conducted in all scientific fields that require it, and this approval should be stated and documented in the article (51). Knowing the special requirements of using experimental animals, respecting them, and complying with universal ethical principles require a scientific and ethical approach; therefore, the experimental animals and research methods to be used in medical research and education must be inspected by ethics committees of animal experiments (13). Moreover, 76.9% (n = 20) of the journals examined in this study requested "research ethics committee approval" (Table 3). On the basis of this, it can be stated that the journals provide a considerable place for the Scientific Research and Publication Ethics Directive of CoHE and TR Index journal evaluation criteria in their publication policies. However, all journals should include the requirement of obtaining ethics committee permission, which is extremely crucial for scientific studies.

The three Rs rule (replacement, reduction, refinement) regarding the use of animals in experiments also forms the basis of today's bioethics rules (43). Moreover, the research and veterinary faculty ethics committees, established in 1998 in Türkiye, protected the ethical rights of animals before the "Animal Protection Law" is enacted, and the protection of the rights of animals has gained rapid momentum with the spread of ethical committees (57). Article 9 of the "Animal Protection Law" numbered 5199 states that "In institutions and organizations that conduct animal experiments, these experiments are allowed through ethical committees established and to be established within their structure"

(31). The "Regulation on the Working Procedures and Principles of Animal Experiments Ethics Committees" contains the relevant provisions (34). In recent years, philosophical and legal views on animal research have been changing, and more emphasis has been placed on animal welfare. In the USA, all proposed research projects that will use animals for experiments should be examined and approved by the "Institutional Animal Care and Use Committee" (IACUC) in terms of three basic ethical principles (3Rs) (11). Moreover, 76.9% (n = 20) of the journals examined in this study and included "research ethics committee approval" in their publication policy (Table 3) can be evaluated as the journals publishing in the field of veterinary sciences largely comply with the criteria determined by the legislation. While 30.8% (n = 8) of them included "animal rights" and 34.6% (n = 9) of them included "animal welfare and protection" in their publication policy (Table 3), it can be stated that ethical sensitivity is shown for the protection of animals to be used in experiments through ethical committees. Moreover, these journals in the field of veterinary sciences, including animals, should include the concepts of "rights" and "welfare" as a separate section in their publication policies in more detail.

The effect of wildlife research on the environment is cited as one of the reasons why wildlife research is so morally complex. Similarly, research that will cause great harm to animals and does not provide significant gains and information that is not worth the harm are not allowed by the IACUCs (12). The 40th article of "Regulation on the Protection of Game and Wild Animals and Their Habitats, and the Principles and Procedures of Combating Pests" (32), the fifth article of "Regulation on Animal Diseases that are Obligatory to Report and Notification" (33), and the Scientific Research and Publication Ethics Directive of CoHE in Türkiye contain the relevant provisions (48). In this study, the data on "Ministry's permission for studies on wildlife" and "Ministry's permission for notifiable diseases" were 7.7% (n = 2) and 3.8% (n = 1), respectively (Table 3). Therefore, journals should include more place for the above-mentioned regulations and the criteria determined by CoHE in their publication policies. In addition, the inclusion of information on studies on wild animal species which need permission from the Ministry and notifiable diseases that need to be mentioned in the publication policies of the journals will raise awareness about the direction of the authors. This will contribute to the country's policy in the context of protecting wild animal species and combating notifiable diseases.

In the context of "Academic Promotion and Appointment Criteria" determined by CoHE, the importance of publications in peer-reviewed academic journals and even in indexes such as Science Citation Index (SCI), SCI-E, Social Sciences Citation Index (SSCI), and Arts and Humanities Citation Index (AHCI) have become essential tools for academic promotion and appointment criteria (36, 49). Journals that are not scanned by crucial indexes find it difficult to get quality articles. This situation has become very evident, particularly in our country (4). In Türkiye, it is essential to publish in journals within the scope of SCI-E, SSCI, and AHCI, which are the indexes of Thomson Reuters, for associate professorship applications in the fields of health, science, and engineering (24). Moreover, these indexes scan journals not only in the field of health and life sciences but also in almost all scientific disciplines, and it is considered prestigious for a journal to be in these indexes. In addition, the rate of reading and/or the possibility of citation of the contents of the journal worldwide increases if included in these indexes (4). SCI, SCI-E, SSCI, and AHCI are indexes used by the "Institute for Scientific Information" (ISI), headquartered in the USA. In brief, ISI is a system that regularly scans numerous scientific journals and announces its content to its readers. The importance of ISI has increased even more with the effective use of the internet. Since 2001, after the obligation to publish articles in journals scanned by these indexes in academic promotions in Türkiye, these indexes have become more recognized in the academy. Timely publication of the journal; proper use of English for bibliographic information; publications by the journal's editor, advisory board members, and article writers in journals within the scope of ISI; and citations to them are very crucial criteria in the selection of journals by ISI (3, 4). Aydın (6), in his study on veterinary sciences-themed scientific journals in Türkiye, reports that three journals are within the scope of SCI-E. In consistent with Aydın's research data (6), a study revealed that 11.5% (n = 3) and 3.8% (n = 1) were within the scope of SCI-E and E-SCI, respectively (Table 2). The increase in the number of journals published in the field of veterinary sciences since 2016 and the increase in the number of journals scanned in national and international indexes such as TR Index (65,4%, n = 17) and Zoological Record (23,1%, n = 6) can be associated with the improvement of publication quality. Although the number of journals scanned in SCI-E does not change, the inclusion of a journal within the scope of E-SCI is crucial; however, other journals have made improvements in publication ethics (Table 3) even if they are not in the international index. Although particularly the journals in the international indexes include the statements regarding the research and publication principles (Table 3) in their publication ethics policies, it can be stated that the indexes in which they are included are a factor affecting the ethical policy of the journals.

TR Index makes considerable contributions to the development of scientific journal standards in Türkiye by putting forth binding provisions in the "Criteria for

journals to be included in TR Index." The indexing criteria include the concern of "complying with the standards" of scientific journal publishing (5). Since 2016, the journals indexed in the TR Index have been included in the evaluation by the IUC as per "article published in national peer-reviewed journal scanned by ULAKBİM" in the "National Article" section of the Associate Professor Application Conditions (24). Journals that have editors and an advisory group consisting of faculty members from at least five different universities publish original scientific/artistic research articles, which are published at least twice per year, have been regularly published and distributed in the last five years, and are accessible in university libraries and accepted as "national peer-reviewed journal" (25). The DergiPark Project, which has been operating under TUBİTAK ULAKBİM since September 2013, aims to ensure that journals are published in Türkiye with high quality and by certain standards (to be scanned in the ISI indexes and other international indexes, etc.) and to build a data path between universities and TUBİTAK (47). DergiPark is a free infrastructure service that enables journals to be managed electronically, and it is not an index. All journals from Türkiye that declare to be academic and peer-reviewed can participate in DergiPark. However, journals that do not meet the requirements for an academic journal are removed from DergiPark. For a journal application that will start its publication life, the publisher needs to be "University or Public." If the publisher of journals with at least one year of the archive is "University, Public, Association, Foundation, and Professional Chamber," they can apply. It is mandatory that the archives of the journals are up-to-date and completed in accordance with the published frequency. Refereed academic journals that fulfill the criteria and are published in Türkiye can participate in DergiPark if they are open access (16). In this study, 76.9% (n = 20) of the journals were included in the DergiPark database (Table 1), 57.7% (n = 15) of the journals related to research were university journals, 42.3% (n = 11) of the journals were published twice per year, and 57.7% (n = 15) of the journals published three to six issues per year (Table 1), which is consistent with the data above. In addition, the focus has been on publishing two or more issues in veterinary sciences journals; therefore, considering the annual publication frequency, these journals comply with the criteria of a "national peer-reviewed journal." Moreover, these journals have publication policies to continue to be included in the TR Index and DergiPark database and to comply with the associate professorship application criteria determined by CoHE.

Therefore, the number of international veterinary sciences journals originating from Türkiye has been increasing in recent years. Considering the annual publication frequency of the journals in the field of veterinary sciences in Türkiye, journals are compatible with the criteria of "national peer-reviewed journals," and they comply with the criteria of COPE in several parameters such as "plagiarism, duplication, originality of the study, and ethics committee approval." However, the journals do not have a common standard and provide insufficient information on some issues. Particularly, the journals that include explanations on "animal rights" and "animal welfare and protection" in their publication policy are not at the desired level. In the publication policies of the journals, the criteria regarding the Ministry's permission for studies on wildlife and notifiable diseases, determined by CoHE, are insufficient. Therefore, efforts should be made to increase the quality of scientific journals publishing in the field of veterinary sciences regarding some parameters (fake data, citation manipulation, Ministry's permission for studies on wildlife, Ministry's permission for notifiable diseases, animal rights, and animal welfare and protection) and to increase the number of journals included in the international index such as ISI.

In addition, this study revealed that TR Index and DergiPark are extremely crucial for researchers and journals to establish a common standard. However, for scientific articles sent to journals, TR Index journal evaluation criteria should be considered to be consistent with ICMJE recommendations and the standards set by COPE. In terms of journal policies, professional organizations such as ICMJE, COPE, and WAME are also very crucial in terms of publication ethics, publication quality, and compliance with international standards.

It has been determined that some issues are not addressed by journals in their publication ethics policies regarding research and publication ethics principles, and some deficiencies have been observed in standards, such as ICMJE, COPE, WAME, and CC License, which are not members and/or do not adopt principles. Moreover, the indexes of the journals are an essential factor affecting their ethical policies. Particularly, a basis was formed for readers and young authors to better understand the standards and general concepts (TR Index, DergiPark, etc.) associated with research and publication ethics and to establish their relationships with each other.

Future studies can be warranted on the basis of the following: the extent to which the journals adopt standards such as ICMJE, COPE, and WAME and the criteria determined by CoHE in research and publication ethics; what motivates journals to adopt ethical principles and policies; and to what extent are they aware of the principles which they include in their policies. Moreover, academic studies in the future are recommended to follow the development processes of the veterinary sciences journals, examine the policies to increase their

searchability in international indexes, and bring different policies to the agenda for the applicability of the standards to be considered. In addition, regulating whether Google Scholar is an index and/or database will be beneficial to eliminate the uncertainty in this direction.

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Conflict of Interest

The authors declared that there is no conflict of interest.

Author Contributions

GA conceived and planned the study. GA and EÇ designed the study. All authors conducted literature review and writing the manuscript. All authors contributed to the interpretation of the results. All authors provided critical feedback and helped shape the research, analysis and manuscript.

Data Availability Statement

The data supporting this study's findings are available from the corresponding author upon reasonable request.

Ethical Statement

This study does not present any ethical concerns.

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