



Research Trend Analysis on Research Ethics in Korea*

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Abstract

Purpose: The purpose of this study is to analyze the research trends of domestic research ethics and to draw implications for the limitations of existing research and future development directions through this. **Research design, data and methodology:** To this end, this study first examined the concept of research ethics and research area to derive an analysis frame. In addition, 72 academic papers published in domestic journals from 2000 to November 2020 were analyzed according to the research period, research area, research subject, research field, research method, and the nature of the journal. **Results:** As a result of the analysis, it is judged that social interest in research ethics led to academic interest after the 2005 Hwang Woo-seok incident. These characteristics show that the interest of academia is changing and increasing significantly when issues related to research ethics are raised socially. Of the 72 papers to be analyzed, 29 (40.3%) conceptual and theoretical studies on research ethics and 43 (59.7%) studies on practical measures were surveyed. **Conclusions:** In the case of published journals on research ethics, the proportion of publications in humanities and social sciences and pedagogical journals was high, and in research methods, literature and theoretical studies were the highest.

Keywords : Research Ethics Trend, Research Area, Research Subject, Research Field, Research Method.

JEL Classification Code : I29, O30, O39.

1. Introduction

For researchers, conducting honest research is accompanied by inherent responsibilities and responsibilities in any academic field. Just as honesty, responsibility, and trust contain the ethical aspects of human beings in life, the integrity and trust of researchers in research have the same meaning as securing research ethics.

In Korea, interest in research ethics increased in 2005 after the incident of 'Hwang Woo-suk's stem cell thesis manipulation'. This case bears the disgrace that is often cited as a typical case of violation of research ethics. The trust of individual researchers has lowered the reputation of the research community and the nation, and it is a good example of how research ethics affects the public's trust.

Recently, a new type of violation of research ethics in which the children of professors are registered in research papers in relation to university entrance exams has occurred. In addition, serious violations of research ethics in which researchers request research grants after participating in poorly managed academic conferences have provoked public outrage.

Accordingly, efforts have been made to prevent research misconduct and establish research ethics. Each institution conducts an annual survey on research ethics and prepares and publishes measures to improve the system to strengthen research ethics.

2. Concept of Research Ethics and Research

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Area

2.1. The Concept of Research Ethics

'Research ethics' is a term that refers to a field that includes all related discussions, emphasizing that research attitudes are important in the era of advanced science and technology and that sincere and responsible research is urgently required (Lee, 2010). Research ethics refers to the principles or behaviors that researchers must follow while conducting research. In other words, research ethics can be said to be ethical principles or behaviors that researchers must follow to conduct desirable and responsible research with honest, accurate, and sincere attitudes (Lee, 2010). Research ethics can be said to be the basic norms to be followed for the responsible conduct of research. Research ethics consists mainly of maintaining integrity in conducting research and complying with ethical standards in specific research areas such as bioethics.

2.2. Research Ethics Research Area

Research related to research ethics can be divided into two main areas.

First, conceptual and theoretical research deals with three major research topics. First, as the meaning and necessity of 'research ethics' and a theoretical approach, these themes are accompanied by a philosophical approach. Second, it includes a discourse that systematically discusses research ethics. Third, bioethics and ethics in academic writing are dealt with as an approach to research ethics in the academic field.

Second, practical research on research ethics is conducted for the purpose of helping to establish research ethics in the research field. It deals with the contents of domestic and foreign institutional research and case analysis, research ethics standards and guidelines, research ethics legal system, policies, research ethics education and program development, and research ethics awareness and actual conditions.

3. Research Methods

3.1. Subject of Analysis

In this study, domestic research ethics research trends were analyzed focusing on academic papers published in Korean academic journals. In order to select the subject of analysis, the initial data were constructed by searching for papers with research ethics in the title, keyword, and abstract by using RISS and Google Scala (site). Among them, only

academic papers registered in the journal list of the National Research Foundation of Korea were included, and papers presented at conferences were excluded. In order to minimize the error of believing only the search results, the abstract and text were reviewed and duplicate papers were excluded. Also, by checking the paper title, abstract, and content, it was set to include only one study with the same content.

Even if 'research ethics' is mentioned in the paper keyword, some papers judged to be difficult to find a correlation with research ethics in the abstract and content were excluded from the analysis. Through this process, 68 academic papers published in domestic journals from 2001 to 2020 were finally analyzed.

3.2. Framework of Analysis

In order to establish a framework for analyzing research trends in research ethics, the approaches of previous studies were examined.

Oh, Lee, and Kim (2016) classified research ethics trends in counseling into four categories: basics, research topics, research subjects, and research methods. Hahm and Choi (2017) analyzed the categories of research ethics in the sports field by classifying the research period, research topic, and journal. Combining previous studies, it can be seen that the research period, research area and research topic, research subject, and research method were used as the main analysis criteria. <Table 1> summarizes the relevant research trend analysis framework.

Table 1: Analysis of research trends in research ethics

| | Detailed Standards |
|----------------|--|
| Study period | By year (from 2000 to 2020) |
| Research area | ① Conceptual and theoretical research ② Practice method research |
| Research topic | ① Concept and necessity of research ethics ② Research ethics discourse analysis ③ Exploring the implications of research ethics by academic field ④ Research ethics education, methodology analysis ⑤ Research ethics program development and application ⑥ Research ethics legal system and policy application case analysis ⑦ Research on research ethics awareness and actual situation |

| | |
|-----------------------------|--|
| Field of study | ① General research ethics ② Biotechnology ethics ③ Research Ethics for Social Minorities ④ Research Ethics in Science and Engineering ⑤ Research ethics in the social sciences |
| Research method | ① Literature and theoretical research ② Quantitative research ③ Qualitative research |
| Academic field of a journal | ① Education ② Healthcare ③ Science and Technology ④ Humanities and Social Sciences ⑤ Others |

Note: Owns

3.3. Data collection and processing

The original texts of research ethics-related papers published in domestic journals, the subject of analysis, were collected through RISS, the journal site, and Google Scholar (<https://scholar.google.co.kr>). For data processing, after reviewing the contents of the papers, a code was assigned according to the corresponding category.

Specifically, coding was carried out based on the research period, research area, research topic, research subject, and research method of each paper. Although this approach has limitations in analyzing the content and meaning of the study in-depth, it is an appropriate method to grasp the overall research trend through frequency analysis. When the contents or characteristics of the paper include two or more classification criteria, the classification method was selected and coded into one subject area with the highest relevance based on the specific research problem. Based on these procedures, it was attempted to derive the characteristics of domestic research ethics-related research trends and to obtain implications for future research.

4. Results of the analysis

4.1. Overall trend analysis

A total of 72 research ethics related papers were published in Korea from 2000 to November 2020. In 2006, 10 were published, and in 2012, 8 were published. It is judged that social interest in research ethics has led to academic interest after the ‘Hwang Woo-suk incident’ in 2005.

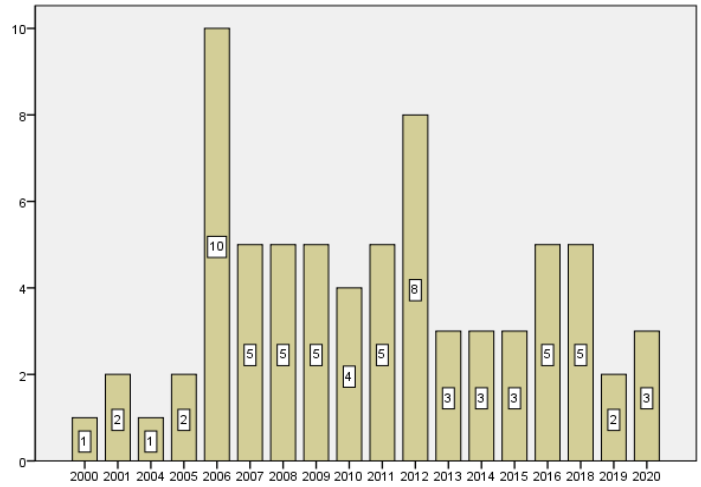


Figure 1: Changes by year in research ethics related research

4.2. Trend analysis by research area and topic

Of the 72 papers, there were 29 conceptual and theoretical studies on research ethics (40.3%), and 43 studies on practical measures (59.7%).

In the study on the practice plan, 22.2% of the research ethics awareness and survey on the actual situation was occupied.

Table 2: Analysis of trends by research area

| Classification | | Total |
|-------------------------------------|---|-----------|
| Conceptual and theoretical research | The concept and necessity of research ethics | 8(11.1%) |
| | Research ethics discourse analysis | 8(11.1%) |
| | Exploring the implications of research ethics by academic field | 13(18.1%) |
| Subtotal | | 29(40.3%) |
| Practice plan research | Research ethics education, method analysis | 14(19.4%) |
| | Research ethics program development and application | 3(4.2%) |
| | Research ethics legal system and policy application case analysis | 10(13.9%) |
| | Research ethics awareness and survey on the actual situation | 16(22.2%) |
| Subtotal | | 43(59.7%) |

| | |
|-------|----------|
| Total | 72(100%) |
|-------|----------|

As for the annual trend by research topic, there were 8 research publications on the recognition and actual conditions of research ethics in 2011-2015, and the number of published papers by research topic in 2006-2010 was confirmed to be 29.

Table 3 : Analysis of trends by year by research topic

| Classification | 2000-2005 | 2006-2010 | 2011-2015 | 2016-2020 | Total (Ratio) |
|---|-----------|-----------|-----------|-----------|--------------------|
| The concept and necessity of research ethics | 1 | 5 | 1 | 1 | 8(11.1%) |
| Research ethics discourse analysis | 1 | 4 | 1 | 2 | 8(11.1%) |
| Exploring the implications of research ethics by academic field | 2 | 5 | 4 | 2 | 13(18.1%) |
| Research ethics education, method analysis | 1 | 5 | 3 | 5 | 14(19.4%) |
| Research ethics program development and application | - | 1 | 2 | - | 3(4.2%) |
| Research ethics legal system and policy application case analysis | - | 4 | 3 | 3 | 10(13.9%) |
| Research ethics awareness and survey on the actual situation | 1 | 5 | 8 | 2 | 16(22.2%) |
| Total | 6 | 29 | 22 | 15 | 72 (100.0%) |

4.3. Trend analysis by research field, research method, and journal characteristics

<Table 4> shows the results of analyzing how research related to research trends has been conducted by research field. As for research ethics-related studies, 44 articles (61.15%) were the largest proportion of studies that dealt with macroscopic and comprehensive studies without specific fields. Those studies were mainly research ethics education, research ethics policy, task or research ethics curriculum and program development. In addition, 16 studies on research ethics in biotechnology (22.2%), 5 studies on social science research ethics (15.3%), and 1 research ethics in science and engineering fields (1.4%) were in the order.

Table 4 : Analysis of trends by research field

| Classification | General Research Ethics | Biotechnology Ethics | Science and Engineering Research Ethics | Social Science Research Ethics | Total |
|----------------|-------------------------|----------------------|---|--------------------------------|-----------|
| Journal | 44 (61.1%) | 16 (22.2%) | 1 (1.4%) | 5 (15.3%) | 72 (100%) |

The results of trends by journal are shown in <Table 5>. In this study, humanities and social science journals were analyzed in the categories of philosophy, bioethics, civic ethics, theology, journalism, counseling, literature, and law. Other journals included real estate, beauty, space and society, design, and publishing. As a result of the analysis, there were 29 publications in the humanities and social science journals and 22 publications in the educational journals.

Table 5: Analysis of trends by journal

| Classification | Education | Health care | Science & Technology | Humanities and social science | Others | Total |
|----------------|------------|-------------|----------------------|-------------------------------|-----------|-----------|
| Journal | 22 (30.5%) | 11 (15.2%) | 1 (1.3%) | 29 (40.2%) | 9 (12.5%) | 72 (100%) |

Analysis of trends by research field and subject is shown in <Table 6>. As a general research ethics field, research ethics education, methodological analysis, and research ethics legal system and policy application case analysis took up the highest proportion. In the field of health care ethics, research ethics awareness and actual conditions were the most studied.

Table 6: Analysis of trends by research field and subject

| | General Research Ethics | Health care | Science and engineering | Social science | Total |
|---|-------------------------|------------------|-------------------------|-----------------|------------------|
| The concept and necessity of research ethics | 7 (15.9%) | 1 (6.3%) | - | - | 8 (11.1%) |
| Research ethics discourse analysis | 8 (18.2%) | - | - | - | 8 (11.1%) |
| Exploring the implications of research ethics by academic field | 1 (2.3%) | 6 (37.5%) | 1 (100%) | 5 (45.5%) | 13 (18.1%) |
| Research ethics education, method analysis | 9 (20.5%) | 1 (6.3%) | - | 4 (36.4%) | 14 (19.4%) |
| Research ethics program development and application | 3 (6.8%) | - | - | - | 3 (4.2%) |
| Research ethics legal system and policy application case analysis | 9 (20.5%) | - | - | 1 (9.1%) | 10 (13.9%) |
| Research ethics awareness and survey on the actual situation | 7 (15.9%) | 8 (50.0%) | - | 1 (9.1%) | 16 (22.2%) |
| Total | 44 (100%) | 16 (100%) | 1 (100%) | 5 (100%) | 72 (100%) |

In the case of research methods on research ethics, literature and theoretical studies accounted for the highest proportion, and studies using qualitative research methods have been conducted since 2012.

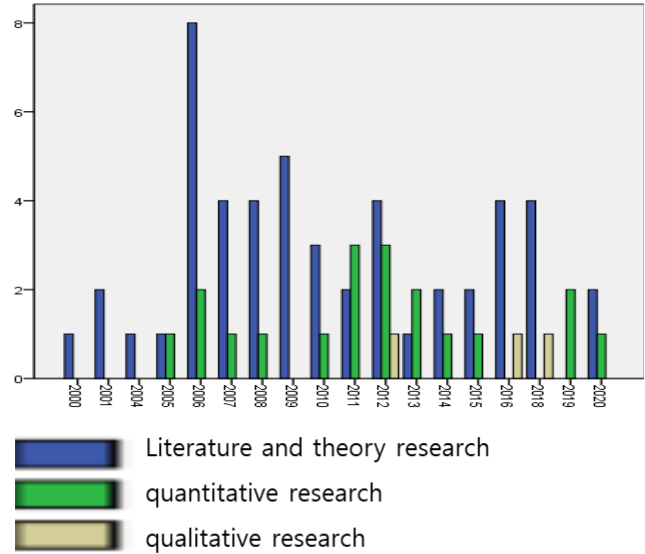


Figure 2: Changes by research method

5. Conclusions

This study analyzed the trends in research ethics by subdividing 72 academic papers published in Korean academic journals from 2000 to November 2020 into research period, research area, research topic, research field, research method, and journal characteristics. analyzed. In particular, it can be seen that the interest of academia has changed and increased significantly as social interest in research ethics has increased after the '2005 Hwang Woo-suk Incident'.

Of the 72 research ethics-related papers, 29 (40.3%) of conceptual and theoretical studies on research ethics were found, and 43 (59.7%) of practical methods were studied. Regardless of the specific research field, 44 articles (61.15%) of research that comprehensively dealt with research ethics education, research ethics policy, tasks, or research ethics curriculum and program development accounted for the largest proportion. As an academic field related to research ethics, the humanities and social science journals had 29 articles, and education journals had 22 articles. In the case of research methods, literature and theoretical studies accounted for the highest proportion, and studies using qualitative research have been conducted since 2012.

Based on the analysis results, I would like to suggest some implications for the research direction of domestic research ethics.

First, although interest in research ethics education

program development is steadily increasing, it is judged that there is insufficient interest in research ethics policy or application methods. 17 studies (23.6%) on research ethics education or program development have been continuously studied, but studies emphasizing the necessity of research ethics education are insufficient.

Second, research methods and research areas (Health care/natural sciences and engineering/social sciences, etc.) should be expanded in order to analyze cases of research ethics practice or to derive improvement plans. As for research trends in the research ethics area, the majority of conceptual theory studies are 29 articles (40.3%). Quantitative and qualitative research methods are increasing, but they are still limited. Diversifying the research subjects and fields of research ethics will contribute to broadening the horizon of research ethics in Korea.

Third, it is necessary to nurture human resources who specialize in research ethics. Research on research ethics shows a brief increase when social issues arise, and subsequent research publications are insufficient. This shows that the domestic academia has not systematically nurtured human resources who specialize in research ethics. For the continuous development of research ethics, it is necessary to systematically foster research ethics experts. For this, it is necessary to set up a research ethics-related department within the institution or university.

Fourth, efforts are needed to secure the research integrity of the Korean research community and researchers. In order for researchers to raise the level of ethical awareness and to have research ethics at the international level, they should voluntarily make efforts to cultivate research integrity in their own research.

In this study, research trends on research ethics (focused on research published in domestic academic journals) for 20 years from 2000 to 2020 were examined. This study is meaningful as a basic data to confirm the research trend of research ethics, which has been conducted mainly in domestic academic journals, and to activate related research.

However, there was a limitation in that data from fields that have not yet been sufficiently advanced were selected as research subjects. In addition, there is still a lack of conceptual and theoretical discussion on research ethics in Korea. Therefore, for the development and settlement of domestic research ethics in the future, more active and comprehensive research on research ethics should be supported.

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