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A Proposed Strategy for Research Misconduct Policy: A Review on Misconduct Management in Health Research System

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ABSTRACT

Background: Today, with the rapid growth of scientific production, research misconduct has become a worldwide problem. This article is intended to introduce the successful experience on the management of research paper misconducts in the field of health research.

Methods: Our aim was to design and develop the strategy for research misconduct policy. Focusing on the national regulatory system, we developed a hierarchical model for paper misconduct policy in all the medical sciences universities and their affiliated research units.

Results: Through our regulatory policy for paper misconduct management, specific protocol was followed in the field of health research publications through which the capabilities of covering the four main elements of prevention, investigation, punishment, and correction have come together.

Conclusions: Considering the proposed strategy, regarding the strengths and weaknesses, utilization of evaluation tool can be one of the best strategies to achieving the prospective of health research papers by 2025.

Keywords: Health research, Iran, misconduct, policy, strategy

INTRODUCTION

Today with the rapid growth of scientific production, research misconduct has become a global problem. Regardless of the lag of consensus about the definition of research misconduct, in general, it is defined as fabrication, falsification, or plagiarism in each aspects of proposing, conducting, reviewing, or reporting the research results.[1,2]

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The estimation of research misconduct incidence depends on its definition that is agreed by research policy makers and other stakeholders.[2,3] Minor and intangible forms of misconduct are common, but because of the nature and extent of the problem, the related available data are not accurate and reliable.[1,4] Based on the results of the comprehensive meta-analysis, about 2% of the scientists had a history of fabricated, falsified, or at least one experience of data modification. It is noteworthy that 14% of scientists were aware of research performance of their colleagues who had done so.[4,5] On the other hand, the recent studies emphasize

on the increased slope in the trend of the retracted papers.[6-8]

Faced with such problems, considering the characteristic and importance of the issue, from the basic overview, on one hand, the growth and the development of governments depend on their knowledge productivity and their knowledge utilization. On the other hand, the critical conditions especially in health sciences have been required the policy makers to implementation and conduction the regulatory preventive policies.[9-11]

Despite some differences in "publication misconduct" classification, primarily plagiarism and duplicate publication are the most common causes of scientific paper retraction. The overall estimation of publication misconduct in PubMed publications' reported about 35%. In non-PubMed indexed material, it was up to 56%.[12]

In the Islamic Republic of IRAN National Health Strategic Plan by 2025, we mostly focused on the published papers as a known criterion of knowledge production.[13] Unsurprisingly in Iran, like many other countries, it is difficult to find the reliable data on the exact number of scientific paper's misconduct.[4] The aim of this study was to focus on the proposed strategy for research misconduct policy in Iran. The aim of this study was to design and develop the strategy for research misconduct policy in health research system.

METHODS

Aiming to access the continues evaluation of health research in medical sciences universities and their affiliated research units, in 2001, the Ministry of Health and Medical Education of Iran, as the main policy making organization in biomedical and health researches, developed a national plan to the annual evaluation of research performance.[14-19]

Through a dynamic process, annually required revisions on indicators or executive procedures have been conducted based on the national policies and required feedback.[14,15] For more than a decade, such a comprehensive mechanism has been concentrated on the foundation and development of three main domains: "stewardship," "capacity building," and "knowledge production."[16-18]

Knowledge production assessment mainly focused on published papers, national and international congress presentations, books compilation, innovations, and patents [Table 1]. For each university, the sum of acquired score shows the knowledge production's situation.[17,18]

During the operational phase, all documents review for predefined characteristics by experts' teams. Based on the paper categories and indexing type, the articles were divided into five types including original research article, review article, brief report or short communication, case report, and letter to the editor.[14-19]

Table 1: Knowledge production indicators and their definitions

Knowledge production indicators
Indexed articles in ISI/Web of Science and PubMed/Medline
The number of indexed articles in ISI/Web of Science and PubMed/Medline
Indexed articles in other international indexing databases
The number of indexed articles in other international indexing databases (Scopus, Chemical Abstract, Biological Abstract, Embase, Index Medicus of Eastern Mediterranean Regional Office, and Index Copernicus)
Nonindexed published articles in national and international scientific journals
The number of nonindexed articles
Articles presented in national and international congresses
The number of paper presentation, either in oral form or poster presentation, in national or international congresses (speakers that are invited to participate and papers published in ISI proceedings gain higher scores)
Compilation of books
The number of compiled books (books written based on national research studies. At least 1% of references must be the result of authors' research studies)
Innovations and inventions
The numbers of innovations and inventions that have been approved by peer review groups, based on which the research project and related article have been published in scientific journals
Citation to articles in textbooks
The numbers of citations to a published article in textbooks

The evaluation system records all the papers and other knowledge products data from the medical science universities and their affiliated research structures. All the details of research products have been recorded in a predefined data bank as follows.

Through data refinement processes, characteristics of papers including title, authors' affiliations, date of publication, journal characteristics, indexing databases, digital object identifier, extracted.

Using the recorded data, the correspondence of interested fields such as duplication, affiliation, and misclassification provides the updated supervision for dynamic policies. Through forward software promotion, some other management would be available for plagiarism detection and paper quality assessments.

RESULTS

Considering the mission of monitoring of the health research misconduct, we have simultaneously developed two approaches.

According to the first overview, through an up-to-down framework, monitoring and management processes start from the highest level of the system. In such a condition, some features such as comprehensive interventions of upper levels, in lower parts of the system replace with other specific requirement such as more accuracy in details of researchers' activities.

Considering that, we specified a predetermined indicator. Parallel with that, the management regulatory system was designed and implemented.

Through the first step of the process, we mainly focused on research papers as the most common and one of the most important research products. To manage a comprehensive response to paper misconduct in the field of health research publications through our proposed strategy, based on processes that provide the possibility of intervention, four main milestones were defined.

Integrated capabilities of covering the four main elements of this strategy; prevention, investigation, punishment, and correction have come together:

- A systematic procedure to develop the updated laws and regulations
- Different information system
- Research performance monitoring and evaluation
- Enforcement of guidelines and instructions
- Restrictive and punitive approach with deviations
- Participatory dynamic feedback
- Linguistic training and institutional support
- Adopting policies for scientific journals
- Scientific journals integrity on publishing instructors.

When updated required rules and regulation, through the participatory processes be at the disposal of all stakeholders, research policies could be following clearly by dynamic systems of monitoring and evaluation. These achieve simultaneously at national level and in all the research units.

Feedbacks used for quality improvement and sharing of resources supply the required potential. These processes, in addition to high levels of monitoring and research units, would be included of all relevant parts such as scientific journals.

For management and responding to the problem, other important cases such as investigating suspected cases, judging, reporting, and punishing following through complementary chain [Figure 1].

Regarding the mentioned regulatory strategy, aim to scientific survives and development medical sciences universities require to additional supervision on their affiliated research institutes and researchers. These could be providing through down-to-up processes.

Each of the smaller units, in addition to their self-monitoring and careful management, acts as pieces of the national puzzle. From this view, continuously in lower levels of the health research system, research centers and researchers themselves consider both their promoting interests and the legal responsibility of their scientific publishing.

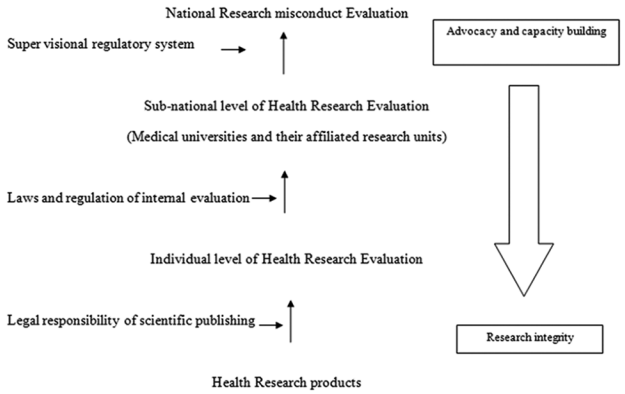

Figure 1:The process of national strategy for research misconduct policy

DISCUSSION

Research misconduct as the worldwide problem violates the approved research rules and regulation.[2,4,20] Measurement of the research misconduct is a crucial input for health policy. Aim to that at the first step better clarification lead to more specific strategies.[4,12]

Based on the related evidences, the research integrity is the main consensus of problem management. In more countries, relevant challenges need high-level supervisional systems, which is supported by the source of national policy.[5,10,11,21]

In most countries, this responsibility has been assigned to the ethical approval systems. In addition, it has been assumed that the role of the national authority reference for final decisions must be cleared of any aspects of conflict of interest.[1,5] Setting up the Office of Scientific Research Integrity Construction is one of the other proposed experiences to investigate the allegations of misconduct.[21,22]

As well as in this regard, other practical policies have been proposed: Providing the guidelines on good practice, encouragement of research and teaching, clarification of research codes, integrity promotion, dishonestly prevention, ethical counseling supports, protection around the difficult analysis of data, commitment to professional authorship, clearance of the conflict of interests, attention to the details informed consent, and a dozen other issues.[1,23,24]

According to the researchers' solution views, editors and scientific journals as the first references are another important structure for paper misconduct managing.

They should be exactly committed to the guidelines and instructions of the Committee on Publication Ethics.[20,25,26] Moreover, high-level source of research policy and funding agencies should take steps to ensure that the papers affected by misconduct are exactly retracted or corrected.[6-8]

Especially for health researchers and who are involved in biomedical fields, ongoing training of ethical consideration topics could be useful for better approaches in designing, conducting, and results publication of health research.[26]

With regard to the above-mentioned points, based on intervention experiences, few countries have the comprehensive experience of covering programs in prevention, investigation, punishment, and correction domains.[3,5,6]

Considering the Comprehensive Scientific Map of the Islamic Republic of Iran that supervises the specific health research vision, the main focus of health research supervision system is concentrated on knowledge production with an emphasis on the international scientific publications. Related indicators had a significant ascending trend. We have been very close to our national quantitative goals, but yet they should be closely followed for quality improvement.[13,14]

Based on our experiences, national and subnational continuous evaluation of research performance, as a powerful executive bottleneck, provides the best opportunity through which the appraisal of the quality and the quantity of published papers lead to more papers misconducts' management.[14,15,27] Knowledge production as one the basic inevitable missions of research institutes and universities leads under the national hierarchical participatory supervision.[27] The success of each of these managerial structures is depending on three main considerations: Accepted practice and values, knowingly committed, and detailed evidences.[28]

Reviewing the process of our experience accompanied with important lessons learned is as follows:

- Web-based evaluation of health research provides an interactive opportunity for better management of research misconduct
- Hierarchical interactive structure of supervision, as a key element, in the best possible way, links different components of this complex system
- The structural contribution of all stakeholders must be clearly defined
- The core system should play the role of high-level source of policy for responding to research misconduct
- Recourses and infrastructures should be providing an aim to predefined requirement.

CONCLUSIONS

Considering the defined experiences and proposed solutions, regarding the discussed strengths and weaknesses, utilization of national integrity in planning and implantation of research misconduct management programs can be one of the best choices to achieving the prospects of ethical consideration and quality promotion of papers that targeted on the health research visions of the Islamic Republic of Iran by 2025.

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Conflicts of interest

There are no conflicts of interest.

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