**TITLE: Ethics of publication process: How do indexed Indian biomedical journals measure up?**

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**ABSTRACT:**

Guidelines or instructions to author on these websites need to be explicit and regularly updated for ethical publication process. The present study did an objective assessment of ‘instruction to authors’ in the websites of Indian journals indexed in PubMed and IndMED. In addition, the number of retractions and reasons for retractions from January 2012 till October 2017 were assessed. A 14-point checklist based on previous studies and review of literature was used. A total of 110 journals were included in the study and their websites assessed. Dedicated section on ethics was found in 56 (50.9%) journal websites, 42 (38.2%) did not mention any specific bioethics guidelines, animal ethics was mentioned in 65 (59%) of the journals and an ethics committee approval was required by 65 (59%) of the journals. Sixty four (58.2%) journals mentioned mandatory informed consent and 19 (17.3%) required assent. There were 22 (20%) journals that required neither Clinical Trial Registry of India (CTRI) registration nor Consolidated Standards of Reporting Trials (CONSORT) guidelines for reporting of clinical trials. There were 38 (34.5%) journals that actively looked for plagiarism. Data sharing was not mentioned in any of the journals. Most common reason for retraction was duplicate publication (23,38.4%) followed by plagiarism (17, 28.3%).

**INTRODUCTION**

Publication in medical science is important for several reasons. Some of these reasons include sharing discoveries and knowledge, recognition or assessment in the field of work and as a requirement for degree or even promotion (1, 2). While publishing is a matter of prestige, it also facilitates a deeper understanding on the subject and promotes further ideas which can lead to scientific advancement in the respective fields(3). This has led to an increase in number of journals and increasing amount of research that is being done and published in India and abroad. Most journals have guidelines in their websites for smooth submission and publication process.

Guidelines or instructions to author on these websites need to be explicit and regularly updated for ethical publication process. A clear, unambiguous public display of zero tolerance towards unethical research and publication process would serve as a gatekeeper to good quality research output. These include recommendations for ethical clearance from the respective institutional review boards, registration of trials in standard registries, participant confidentiality and autonomy, and authorship guidelines to name a few.

There has been increasing interest in the assessment of journal websites for author instructions and ethical publication process. This type of assessment has been done in the past for a limited number of journals, or specialties (4-7).It has not been done across specialties and across major indexing databases.

In the present study the authors carried out an objective assessment of ‘instruction to authors’ in the websites of Indian journals indexed in PubMed and IndMED. In addition, the number of retractions and reasons for retractions from January 2012 till October 2017 were assessed.

**METHODOLOGY**

The author (MB) conducted a survey of websites of Indian Journals in IndMED (8) and PubMed with respect to ‘instructions to authors.’ A14-point checklist was prepared based on previous studies (4-6), a preliminary review of some instructions to authors and relevant review of literature. The articles withdrawn in last five years (January 2012 to October 2017) were also identified and reasons for withdrawal assessed.

**FIGURE 1: Methodology of the study process:**

PubMed and IndMED indexed Indian journals

Papers retracted since last 5 years in these journals

Journal website for Instruction for authors

|  |  |
| --- | --- |
| * A separate ethics section * Specific guidelines for ethics reporting * Animal ethics * Ethics approval required * Consent and assent * Privacy and confidentiality * Mentions following International Committee of Medical Journal Editors (ICMJE) guidelines and listed in ICMJE list of journals * Authorship: Criteria mentioned and contribution to be declared | * Plagiarism checkSimultaneous publication prohibited   Key words used for identification:   1. Retraction 2. Withdrawal 3. Corrigendum 4. Erratum  * Conflict of interest (COI) * Ethics of clinical trials: * Clinical trial guidelines: Clinical Trial Registry of India (CTRI) registration and Consolidated Standards of Reporting Trials (CONSORT) reporting * Sharing of data on databases * Committee on Publication Ethics (COPE) membership |

**Inclusion criteria:** Medical journals belonging to modern medicine were included.

1. Indian journal indexed in IndMED, PubMed or both.
2. Articles withdrawn during the period of January 2012 to October 2017

**Exclusion criteria:**

Journals with no website, journals without any kind of author instructions and periodicals were excluded from the study. Journals belonging to alternative medicine, such as Ayurveda, Siddha or Unani, etc., were also excluded due to lack of clarity with regard to applicability of research and publication ethics in these disciplines. Moreover, the knowledge and background of the authors limited their expertise in this area to make any judgment.

**RESULTS**

A total of 129 Indian journals were shortlisted using the IndMED website and PubMed National Library of Medicine catalogue for journals. Of these 110 journals had accessible websites with clear author instructions and were included in further analysis. Table 1 depicts the indexing characteristics of journals included in the study.

Table 2 describes the results of the instruction to authors on the journal website. A dedicated section on ethics was found in 56 (50.9%) journals. In the rest of the journals it was part of the text where it was not prominently displayedwithin the instructions. Fifty one (46.4%) journals mentioned the Declaration of Helsinki as the guidelines to be followed for articles submitted to the journals. Ten (9%) journals mentioned the Indian Council of Medical Research guidelines as the only guideline and seven (6.4%) journals mentioned both. Forty two journals (38.2%) journals did not mention any specific guidelines for research and publication ethics. Animal ethics was mentioned in 65 (59%) of the journals. An ethics committee approval was required by 65 (59%) of the journals.

Regarding patient autonomy, 64 (58.2%) of the journals mentioned that an informed consent was mandatory for human participants and only 19 (17.3%) of the biomedical journals studied mentioned assent. Importance of privacy and confidentiality of the human participants was conveyed in 61 (55.5%) of the journals. While 73 (66.4%) journals mentioned following the ICMJE guidelines for publication, only 34 (31%) of these journals were actually listed in the ICMJE list of journals.

With regard to clinical trials, registration of the trial in clinical trial registry of India as a requirement was mentioned in 36 (32.7%) of the journals and reporting of trials according to CONSORT was required by 52 (47.3%) of the journals. There were 22 (20%) journals instructions to authors that required neither CTRI registration nor CONSORT guidelines for reporting of clinical trials. There were 38 (34.5%) journals that actively looked for plagiarism, explicitly mentioned in the website along with warning of action against authors if found doing so.

One of the most commonly followed parameters was that of prohibition of simultaneous publication as this was described very clearly in 81 (73.6%) of the journals. This was followed by the requirement of clarification regarding conflict of interest (COI) statement (75, 68.2%). There were 18 journals that mentioned that they were members of Committee on Publication Ethics (COPE) .

Table 3describes the reasons for 60 retractions that took place from January 2012 till October 2017. The most common reason for retraction was duplicate articles, (23, 38.4%), followed by plagiarism (17, 28.3%) which included one article with plagiarism from Wikipedia. Some of the other reasons for retraction were authorship issues and ‘inadvertent publication’.

**DISCUSSION**

Our study attempts to assess the preparedness of biomedical journals from India, indexed in PubMed and IndMED for ethical publication process. Indexation facilitates accessibility, increases readership and reflects quality to some extent (9). IndMED is an ICMR funded project that supplements the international PubMed indexing service for select peer-reviewed Indian medical journals (8). We discuss the findings of the study as per the checklist used.

**Separate section in ethics and specific guidelines for ethics:**

A separate section dedicated to ethics is indicative of the importance to ethical research and publication process by the journal. This was found in the website of roughly half of the journals surveyed. More than half mentioned Declaration of Helsinki as specific guidelines to be followed. In a recent study 71% mentioned Declaration of Helsinki but only 15% referred to the latest amendments. The rest referred to the older versions (10). The absence of near ubiquitous reference to ICMR guidelines in Indian journals was striking. This could be because the more recent ICMR guidelines were in the draft phase when the data collection was done for this study (11).

**Animal ethics:**

Animal ethics found place in the instruction to authors of less than 60% of the journals. This could be because some of these journals may not be publishing research on animals often. But since they do not explicitly state that no animal studies will be published in the journal, it is required that they mention about animal ethics. The instructions to authors have an educational value in disseminating principles of biomedical ethics to the scientific community and should find a place in the author instructions (10).The Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) is a statutory body formed by anAct of the Indian Parliament under the Prevention of Cruelty to Animals Acts and was the one most commonly mentioned by the journal websites (12). Indian National Science Academy (INSA) guidelines (1992 and 2000; in 2000 the genetically modified animals were included) were mentioned in five journals. In a study by Atlas et al in 2003, 124 high impact journals were assessed using their instructions to authors. Only 40 included some type of guideline concerning protection of experimental animals (13). In another study on59 Indian medical journals, approval from an animal ethics committee was mentioned only in 10 journals (7).

**Ethics approval as a requirement**

In the present study, 61% journals required ethics approval for research publication. The mere absence of mention of ethics clearance does not mean that the research published in these journals is unethical (14). It could be due to lack of space, need to report competing content of the research work and absence of such a requirement specified in the journal guidelines. Forty three out of 110 journals did not state a requirement for mandatory ethics approval, and this might be perceived as encouraging “opacity” (as opposed to transparency)or not considering ethical review for publication important in the publication process. A study was conducted to assess reporting practice of ethics approval in four Indian journals, namely Journal of Association of Physicians of India (JAPI), Indian Journal of Surgery (IJS), Journal of Obstetrics and Gynecology of India (JOGI) and Indian Journal of Orthopedics (IJO). A total of 673 articles were reviewed of which mere 163 (24%)reported ethics approval (6).

**Consent and assent**

Participant consent, in the form of an informed consent was a requirement in 58% of the journals. This requirement has many finer points that are usually not mentioned in the journal instructions to the authors but have been described in detail in the Declaration of Helsinki (15). Here, after ensuring that the participant has understood the information, the investigator should preferably take a written informed consent, and when this is not possible, formally document the non-written consent with witness. Moreover, it is very importantthat the physician-investigator identifies a dependent relationship where consent may not be entirely voluntary. The present study found that many journals which require an informed consentinstruct so only in reference with clinical photographs. But informed consent to explain the full extent of the participant’s involvement is required in any study which involves humans and not just for clinical photographs.

Astudy done by Asai and Singu, in 1999 found that eight out of 11 anesthesiology journals from Science Citation Index Journal Citation Report, had mentioned informed consent as a requirement which was a marked improvement as compared to that in 1995 (16). In a study by Belhekar in 2014, 673 research articles were reviewed from JAPI, IJS, JOGI and IJO(6). Overall, 26.5% articles mentioned informed consent, of which IJS fared the lowest (16.2% articles mentioning informed consent) followed by JAPI(39% of articles). In 2011, a survey of 59 Indian journals (selected from PubMed, Google and National Informatics Centre) found that 74.5% journals mentioned the requirement of informed consent (7). In 2017, a similar survey in 55 PubMed indexed Indian journals found that reporting whether consent was obtained for enrolment in a study was recommended by 47.3% of journals. This study identified the phrases that were used for consent: “consent” (n=1); “informed consent” (n=23) and “written consent” (n=2) (10). A very insightful qualitative study in Kenya explored the community views on consent process during a time when three research studies were being done in the rural area (17). It was found that the community had confusion and could not distinguish between clinical investigations and research suggesting therapeutic misconception.

Only 17% journals required assent. While it is possible that not all journals deal with pediatric population, it can be argued that these journals also do not have any policy to refuse original research in pediatric population and hence need to address assent in their submission guidelines. Similar findings have been noted in past; in one study only nine out of 59 (15.2%) Indian medical journals had assent as a requirement and in another it was 18% (7, 10). According to the Declaration of Helsinki, when a potential research subject is incapable of informed consent, assent should be taken along with the consent of the legally authorized representative (15). The ICMR guidelines (2006) guidelines mention the requirement of assent of the child in mature minors and state the required age as 7-18 years of age and the recently updated ICMR guidelines add that an oral assent is required for ages 7-12 and written for ages 13-18 (11). The WHO states that the age at which this informed assent should be taken varies, but the researchers should consider asking for assent from children over the age of 7 years and take it from all children over the age of 12 years of age (18). In a study in 2008, 132 research articles from two Indian pediatric journals were examined for ethical issues. A total of 54 articles had children of 7 years or more and were required to report assent, but only eight(15%) reported children’s assent (5). The problem thus seems relevant even in the journals specifically addressing the vulnerable pediatric population. Moreover, the instructions to authors are educational for young researchers and can serve as a medium to highlight the importance of assent and should find a place in instructions to authors of all journals.

There has been debate around the need for assent where Baines states that ‘if consent is the authority to proceed, then assent has no role’ and that it can actually harm (19). But the purpose of an assent is not to provide second consent but to facilitate child’s involvement in decision-making process that involves him or her (20). The three important ethical arguments used for assent are: children’s rights, the best interest of the child and respect and facilitation of the child’s developing autonomy which has future implications. As Sibley explains, there is a two-fold justification: *‘respect for the parent’s pedagogical role in teaching their child to become autonomous and respect for child’s moral worth’*. The latter basically means listening, considering, engaging and involving children in the decision making process (20).

**Privacy and confidentiality**

Protection of privacy and confidentiality of research participant was mentioned in 55.5% of the journals in their author instructions. Most journals mention protection of privacy and confidentiality in the context of clinical photographs whereas these have relevance beyond just photographs. Privacy is a person’s interest in controlling access to himself or herself. Apart from physical, such privacy can also be, informational. Confidentiality deals with the informational privacy. Information in this context mean a medical condition, income details, or personal habits, among other things. In terms of physical privacy, it can be body part examination, biological specimen and related personal space. Accessing medical records, for example can be invasion of informational privacy. While both are important in clinical setting as well as research settings, it is more important in research setting where the responsibility for the protection of research subjects is with the researcher and never with the research subject (15). In the study by Asai and Shingu in 1999 the term privacy was present in 7 of 11 journals in Science Citation Index (16).

**ICMJE and authorship**

In 1978, some of the editors of medical journals got together and constructed a minimum guideline for publication formatting requirements. This early document called the Uniform Requirement for Manuscripts (URM) has over the years evolved into the much respected ICMJE guidelines that cover a wide range of publication quality issues, the most recent edition of which came out in 2016 (21). While more than 66% Indian journals in the present study mention that they follow the ICMJE guidelines, only 31% were actually listed in the ICMJE list which is otherwise a very simple process (22). As ICMJE mentions, being listed does not mean ‘membership’ or ‘certification’ of ICMJE itself, but maintenance of such a list has a potential to promote quality of reporting from medical science (22). Authorship criteria based on ICMJE were mentioned in 51% while 45% required author contribution to be declared. In a similar study in the past, authorship as per the ICMJE was mentioned in 59% of the Indian journals (7). The ICMJE has recommended four criteria for authorship: substantial contribution to conception, or acquisition, analysis or interpretation of data; drafting the work or revising it; final approval and lastly, agreement to be accountable for all aspects of the work accuracy and integrity (22). This is to safeguard credit and importance of academic work. There is also a criticism that it has become a ready-made tool for the industry where it may exaggerate the contribution of academic authors and downplay the industry authors either as acknowledgment or a contributor in small print (23). Nevertheless, these criteria have been the first to objectivise the requirements and in the absence of a better benchmark, they serve the purpose.

**Plagiarism**

The American Association of University Professors in their statement on plagiarism have defined it as “taking over the ideas, methods, or written words of another, without acknowledgment and with the intention that they be taken as the work of the deceiver, is plagiarism” (24). Plagiarism is universally considered as unethical practice and the consequences may range from article retraction to retributive action. The proportion of journals looking actively for plagiarism, including that in author instructions and warning an action against it was 34.5%. A journal may not necessarily include that in author instructions but may look for it can also be a possibility. But when all these instructions are assessed in a holistic manner and in context with other deficiencies in the author instructions, not including it almost indicates not actively looking for it. Common reason for 134 retractions by BioMed Central journals from 2000-15 was textual plagiarism (25). In another analysis of more than 2000 retraction in PubMed, 9.8% were due to plagiarism and countries with high incidence were Japan, China, India, Korea, Italy, Turkey, Iran and France (26). A study from India which assessed the knowledge about plagiarism in 5000 dental professionals found that 43% had frequently and 30% had occasionally indulged in plagiarism (27). In a meta-analysis of surveys of scientists admitting to plagiarism, it was found that pooled estimate of committed plagiarism was 1.7% (CI 1.2-2.4) and that of witnessed plagiarism was 30% (CI 17-46) (28).

**Prohibition of simultaneous publication**

The ICMJE’s Recommendation for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals (updated December 2017) prohibits simultaneous submission of manuscripts (21). This was the second most frequently mentioned safeguard (after COI) in journal instruction to authors (74%). While this has not been studied in detail by past studies on publication ethics, there are case reports where the dates of submission and publication dates suggest that the articles were simultaneously submitted to more than one journal (29).

**Conflict of interest declaration**

This was the most common requirement in the websites of the journals surveyed (75%). According to the new ICMR guidelines, COI is a set of conditions where professional judgment concerning a primary interest such as participants welfare or validity of research tends to be unduly influenced by a secondary interest, financial or non-financial (personal, academic or political) (11). Rowan-Legg et al compared journal instructions between 1995 and 2005 for COI disclosure in 100 biomedical journals from Index Medicus (30). The proportion of journals requiring COI disclosure increased from 75% to 94% in this period. They defined COI disclosure under 9 domains: employment or leadership position in commercial firm, employment as consultant for commercial firm, family connection, stock ownership, honoraria, research funding or grant, expert testimony, patents or other remuneration. It was considered comprehensive when the website mentioned these or more domains. The rest had vague statements that allowed optional compliance (30). While most of the times one thinks of COI in terms of financial one, it could also be academic, personal, conceptual, societal, clinical belief, institutional, etc (21).

**Ethics of Clinical trials – CTRI and CONSORT:**

The requirement of a trial to be registered in CTRI was mentioned by 33% of the journal instruction to authors and should be reported according to Consolidated Standards of Reporting Trials (CONSORT) by 47% of the journals. Almost 20% of the journals mentioned neither. While CTRI is a registry and CONSORT is a reporting format, both contribute towards ethical conduct and reporting of clinical trials. These are comparable to findings of a study in 55 PubMed indexed Indian journals where CONSORT was required by 58% of the journals and CTRI registration by 36% of the journals (10). Study by Rowan-Legg found only 37% of 103 biomedical journals indexed in Index Medicus requiring submission according to CONSORT (30).The CTRI in India was launched in 2007 for free registration of trials. The new ICMR guidelines and Declaration of Helsinki also make registration mandatory (11, 15).The trialsmay include any intervention such as drugs, surgical procedures, devices, biomedical, educational or behavioral research, public health intervention studies, observational studies, implementation research and preclinical studies of experimental therapeutics and preventives or AYUSH studies. Many editors of eminent Indian journals also released a statement on need of CTRI registration of trial manuscripts before publication (31). This is especially important as India is becoming a hub for clinical trials facilitated by Contract Research Organizations (CROs) which makecheaper and faster trials possible (32). Apart from journal author instructions, CTRI registry and CONSORT for reporting, legal oversight, formal training and accreditation of Ethics Committee, research mentorship, transparency, increasing public understanding of research are some important interventions for ethical clinical trials in India (33).

**Data sharing** The ICMJE proposes that the authors should share de-identified individual data within 6 months after the publication (34). The method of data sharing should be part of the plan when the trial is registered. It has the advantage of preventing selective publication and selective reporting of research findings and possibility of duplication research. While this is a welcome move, there are pros and cons as far as peer review process is concerned (35). Reviewers have access to the data which helps the scientific review process, but there is also a possibility of delay due to extra burden of material to be reviewed leading to reviewer fatigue or if they look to further their own research in the same area (35). This is still a new concept that is yet to catch up in the academicians and researchers in India as reflected in the lack of such instructions in the journal websites.

**Committee on Publication Ethics (COPE) Membership**

COPE membership in the journals studied was 16.4%. Membership in COPE shows that a journal follows good standards of publication ethics and practices the principles outlined therein. There are minimum set of criteria that journals applying for membership will be assessed for. Journals that are not sufficiently transparent about their business practices will fail to get a membership.

**Retractions**

From the websites assessed, there were 60 articles that were retracted for various reasons from 2012 till 2017. The percentage of articles retracted due to duplicate publication was 38.4%. In five (8%) instances, there was no specific reason for retraction mentioned by the editor, which is contrary to the COPE guidelines (36). Two more papers mentioned ‘inadvertently published’ as reason for retraction which does not convey clarity. In a study by Moylan et al, 134 retractions from BioMed Central were analyzed. Most adhered to the COPE guidelines where explicit reasons for retraction was given (25). There were three retractions due to authorship issues in the present study where either the permission of the author was not taken (2 retractions) or author name was included by mistake without his contribution. Retractions due to plagiarism were the second largest category, in the present study (28.3%) and this is similar to the finding of the study by Moylan et al (25). Another large study which has done a detailed review of 2,047 PubMed indexed articles which were retracted till May 2013 found that 21.3% were due to error, 67.4% were due to misconduct, fraud or suspected fraud (43.4%), duplicate publication (14.2%) and plagiarism (9.8%) (26). In 2016, Springer Nature announced retraction of 58 articles published by Iran-based authors due to plagiarism, manipulation of peer reviewers and the peer review system (37).

**Strengths and Limitations**

There have been studies in the area of publication ethics, but usually limited to some specialties or limited number of journals or limited areas in publication ethics. This study, took into consideration all these previous studies and made a comprehensive checklist which then assessed all the Indian PubMed and IndMED journals. It is the largest number of author instructions of Indian journals studied so far. But the limitations are that the author instructions are only one of the means to streamline ethical publication process. It is not all; journals may have most stringent ethical publication standards, but may not describe everything in the author instructions.

It is not difficult to have comprehensive author instructions, but still not follow standards of ethical publication process. There have been many experiments demonstrating the ease of predatory publication process. A program called ‘SCIgen’ was created that could create computer-science papers with realistic graphs, figures and citations (https://pdos.csail.mit.edu/archive/scigen/). When paper thus created was presented in an in an international conference it even got accepted, but later the hoax was busted. There is now freely available software called ‘SciDetect’ that detects automatically generated papers (38). This kind of software is yet to be made available in medical science.

In another experiment in biomedical publishing, a fake paper was concocted by the journal ‘Science’ with 304 versions on wonder anti-cancer drug were submitted to open-access journals. More than half of them accepted the article. Of the 106 journals that performed some review, 70% accepted the paper. Most reviews focused on the layout, formatting and language (39). While author instructions are one aspect, in ‘Dr Fraud’ experiment, fake editor was included in the editorial board without necessary checks (40).

**CONCLUSION**

The present study assessed the indexed Indian Biomedical journals for ethical publication process using their instructions to author in their websites. There are a number of lacunae in the instructions to authors with the most important and widely missing being the absence of a dedicated section for ethics. Assent of child participants, specific ethics guidelines to be followed, privacy and confidentiality, clinical trial guidelines are also areas that require much attention and improvement. A clear warning against the menace of plagiarism was also missing explicitly in many journals. To address this menace, the scientific society journals should budget for procuring plagiarism detecting software on priority basis. Data sharing was uniformly missing in all the journals and it has still not caught the attention of Indian researchers in the clinical trial landscape. The number of retractions in last five years suggests that there are valid reasons to strengthen the quality of instructions to authors in the journal website.

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**Table 1: Indexing characteristics of Journals included**

|  |  |  |
| --- | --- | --- |
| **Indexing characteristics of journal included (N = 129)** | | **Number (%)** |
| Indexing | PubMed only | 26 (20.2) |
| IndMED only | 37 (28.7) |
| PubMed and IndMED | 66 (51.2) |
| Indexed in PubMed (n=92) | Presently indexed | 70 (76.1) |
| Not presently indexed | 22 (23.9) |

**Table 2: Instructions to author towards ethical publication process**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Specific instructions (N = 110; 19 journals had no author instructions accessible on their websites)** | | **Number (%)** |
| 1. | Separate ethics section | Yes | 56 (50.9) |
| No | 54 (49.1) |
| 2. | Any specific guidelines for ethics being followed | ICMR | 10 (9) |
| Declaration of Helsinki | 51 (46.4) |
| Both | 7 (6.4) |
| None | 42 (38.2) |
| 3. | Animal ethics mentioned | Yes | 65 (59) |
| 4. | Ethics approval required for submission | Yes | 67 (61) |
| 5. | Consent and assent | Informed consent | 64 (58.2) |
| Assent requirement | 19 (17.3) |
| 6. | Privacy and confidentiality | Yes | 61 (55.5) |
| 7. | ICMJE guidelines | Mentions that follows ICMJE guidelines | 73 (66.4) |
| ICMJE listed | 34 (31) |
| Authorship criteria mentioned | 56 (51) |
| Author contribution to be declared | 49 (44.5) |
| 8. | Actively look for plagiarism and action if found | Yes | 38 (34.5) |
| 9. | Simultaneous publication prohibited | Yes | 81 (73.6) |
| 10. | Conflict of interest declaration required | Yes | 75 (68.2) |
| 11. | Ethics of Clinical trials | CTRI registration required by the journal | 36 (32.7) |
| Manuscript reporting according to CONSORT | 52 (47.3) |
| Instructions mention neither CTRI nor CONSORT | 22 (20) |
| 12. | COPE membership | Yes | 18 (16.4) |
| 13 | Journals with author instructions or proper website not found |  | 19 (17.3) |
| 14 | Data sharing | Yes | 0 (0%) |

ICMR: Indian Council of Medical Research; ICMJE: Internal committee of medical journal editors; CTRI: Clinical Trial Registry of India; CONSORT: Consolidated Standards of Reporting Trials; COPE: Committee on Publication Ethics

**Table 3: Journal-wise number of articles retracted and reasons for retractions**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Journal name** | **Number retracted** | **Reasons for retraction** | | | |
|  |  | **Duplicate** | **Plagiarism** | **Simultaneous submission** | **Others** |
| Journal of minimal access surgery | 1 | 1 |  |  |  |
| Indian journal of pediatrics | 3 |  | 1 |  | * Authors requested as the data got mixed up * Copyright issues |
| Indian journal of experimental biology | 1 |  |  |  | Reasons not known |
| Indian journal of dermatology, venereology and leprology | 2 | 1 |  |  | Patient family revoked the permission due to privacy issues |
| Indian journal of pathology and microbiology | 2 |  |  |  | Reasons not known |
| Indian journal of psychiatry | 1 | 1 |  |  | Plagiarism (from Wikipedia) |
| Neurology India | 1 |  |  |  | Reasons not known |
| Indian journal of community medicine | 4 | 4 |  |  | Two articles of same kind published twice thus all four retracted |
| Diabetes and metabolic syndrome | 1 |  |  |  | Reasons not known |
| Journal of cancer research and therapeutics | 2 | 2 |  |  |  |
| Indian journal of dental research | 3 |  | 3 |  |  |
| Journal of the Indian society of pedodontics and preventive dentistry | 2 | 2 |  |  |  |
| Indian journal of urology | 2 | 1 | 1 |  |  |
| Indian journal of plastic surgery | 1 |  |  | Indian journal of occupational and environmental medicine | 1 |
|  |  |  |  |  | Inadvertent publication (reason not clearly mentioned) |
| Annals of cardiac anaesthesia | 2 |  |  |  | No reasons clearly mentioned |
| Indian journal of public health | 1 |  |  |  | Inadvertent publication (reason not clearly mentioned) |
| Indian journal of dermatology | 8 | 4 | 2 | 2 | Out of these, 2 were triplicate submission  One was plagiarized from thesis |
| Indian journal of surgery | 1 |  |  |  | Copyright issues |
| Journal of parasitic diseases | 2 |  | 1 |  |  |
| Journal of anaesthesiology: clinical pharmacology | 2 | 1 | 1 |  |  |
| Journal of indian society of periodontology | 4 | 1 | 1 |  | Misrepresentation of facts  no permission of co-authors was taken before publication |
| Journal of human reproductive sciences | 3 |  | 3 |  |  |
| Journal of Indian society of pedodontics and preventive dentistry | 1 | 1 |  |  |  |
| Contemporary clinical dentistry | 6 | 4 | 2 |  |  |
| Indian journal of anaesthesia | 1 |  | 1 |  |  |
| Indian journal of clinical biochemistry | 1 |  |  |  | Inclusion of author without permission/ information |
| Indian journal of medical and pediatric oncology | 1 |  |  |  | Mistake in including author name with no contribution |
| Medical journal armed forces India | 1 |  | 1 |  |  |
| **Total** | **60** | 23 (38.4%) | 17 (28.3%) | 2 (3.3%) | 18 (30%) |