

Authors' awareness of publication ethics: An international survey

Introduction Medical ethics represent an integral element of research and clinical training. However, formal training in publication ethics often appears to be an after-thought. An increased pressure to publish does not appear to have been matched with attendant training in and comprehension of increasingly complex publication ethics.

Aim To gauge perceptions of ethical issues in a variety of situations related to medical publishing.

Methods We developed 5 vignettes which allowed for experimental manipulation of a range of ethical issues. Each contained 3 variables (e.g. seniority of researcher) with 2 possible options (e.g. junior/senior researcher). Corresponding authors of research submissions to 20 biomedical journals were invited to complete the survey. The survey had 3 sections: A) a random presentation of 5 vignettes describing scenarios for which respondents were asked to rate the perceived level of unethical behaviour (0 to 10); B) questions about the respondent's perceived level of knowledge of 7 ethical topics related to publishing; and C) respondent demographics.

Results 3668/10582 (35%) completed at least 1 vignette and 3230 (31%) completed the entire survey. Respondents worked in 100 countries, had received research training in 85 countries and reported varying levels of publishing and reviewing experience; 31% said their principal language was English. 74% (n=2700) had received ethical training from a mentor, 46% (n=1677) a partial course, 31% (n=1130) a full course and 60% (n=2206) an online course; only a small proportion rated their training as excellent. 221 (6%) reported receiving no ethical training. There was a full 0 to 10 point variation in ratings of the extent of unethical behavior within each vignette. 4 of the 5 vignette topics described scenarios involving unethical behavior, yet 10% to 24% respondents rated the behavior as entirely ethical. Ethical ratings were statistically affected by experimental manipulations in all of the vignettes (e.g., an article with 35% plagiarised content was rated as more unethical than one with 10%), supporting the notion that respondents made ethical judgements using the context of the behaviour. Female respondents reported a lower level of perceived knowledge than similar male counterparts ($d=0.25$ standard deviation units, $p<0.0001$) and rated each vignette as more unethical than males. Differences in perceived ethical knowledge were observed across countries. Respondents from South Korea reported the highest level of knowledge that differed by $d = 0.79$ ($p < 0.0001$) standard deviation units from similar respondents in Norway, who reported the lowest level of knowledge. Serving on an editorial board was associated with a higher level of perceived knowledge ($d=0.12$), as was the number of papers published previously ($d=0.07$ per paper).

Conclusions There was great variation in responses to all vignettes and levels of perceived knowledge of specific publication issues implying there is diversity in the teaching of publication ethics. If efforts to introduce uniformly applicable ethical standards are to succeed, formal instruction and the provision of universally recognised training resources is

required. This would ensure a common understanding of ethical matters and reduce reliance on inconsistent sources of ethical training such as mentor-student relationships.

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