How Many Work Hours Are Requisite to Publish a Manuscript?

Sir:

Advances in medicine are driven by propagation of research and dissemination of meaningful results from basic science, clinical, or translational studies. Although a randomized controlled trial has the highest power, this is not the most frequently conducted study method in surgery, as randomized trials are often not feasible due to disease infrequency or an inability to conduct an ethically sound trial. In clinical research, the most prevalent study design is a retrospective case series. Quantifying the hours spent on a retrospective study from idea genesis to manuscript publication is an important metric for clinicians, students/trainees, academic departments, and administrators in academic medical centers. It will allow appropriate allocation of funding for research-based activities, including human capital, research infrastructure, academic surgeon compensation, and for promotion/tenure purposes. Currently, there is an absence of a good metric in the literature quantifying the hours that go into publishing a retrospective study. Roland and Kirkpatrick alluded to this question in 1975 but did not study it. This study aims to quantify work hours associated with publishing a manuscript with a retrospective study design.

METHODS

Following approval of University of British Columbia Children’s and Women’s research ethics board (H12-01664), 16 surgeons with 5 or more published retrospective studies identified via PubMed were selected to participate in this study; a survey was designed as the data collection tool. Careful screening for publications with a retrospective study design was identified on PubMed, based on the surgeon’s name. Investigators were given a package with a separate survey data sheet for each individual published manuscript and were asked to estimate the hours spent by each member of the study team (principle investigator, coinvestigator, resident, research assistant, clinical research coordinator, medical student, and others) toward 8 components of the research cycle: study planning, literature review, ethics application, data collection, data analysis, manuscript preparation, manuscript submission, and postsubmission revision for each publication. Surveys returned with insufficient or incomplete data were excluded. Descriptive/summary statistics were used to analyze the data.

RESULTS

A total of 198 published retrospective studies were identified. Thirteen surgeons returned a total of 171 surveys (81% response rate) published over a 22-year span (1990–2012). The number of contributing authors ranged from 2 to 11, with the number of subjects ranging from 3 to 7071. Results revealed that a median of 177 hours was spent per publication (range, 29–1287). Neither the number of authors nor the number of subjects correlated with the hours spent per publication. The individuals spending the most time per publication were medical students, followed by research assistants and resident trainees (34%, 23%, and 20% of total hours, respectively); Figure 1 graphically depicts these data. The aspect of the research cycle that consumed the most hours was data collection, followed by manuscript preparation and data analysis (23%, 22%, and 13% of total hours, respectively); Figure 2 graphically depicts these data.

DISCUSSION

Time estimates for publications from start to finish are between 4 and 5 years. However, there is no published time estimate for the hours of required work during this time. Results of our study suggest that it takes a median of 177 hours (or roughly twenty-two 8-hour days of consecutive work by a single individual) to take a retrospective study from idea genesis to publication; these hours reflect a significant amount of dedication by the study team.
Interestingly, the number of authors and study subjects did not seem to correlate with the total hours required to publish a manuscript. One possible explanation is that the number of data points collected as part of the chart review can greatly alter the time requirement, and this was not examined in our study. In addition, databases with preentered patient information could have been used for studies with large number of patients, thereby decreasing the amount of time needed for data collection.

We recognize that a major limitation of our study is the presence of recall bias. This confounding variable is inherent to all retrospective survey-based study designs. Interestingly, several articles have consistently shown that people underestimate the duration of past tasks. A more accurate way to study the question at hand would be to use a prospective design. However, given that there is an average time lapse of 4–5 years before a project is published and the uncertainty in publication success, a prospective study design may not be either the most effective or efficient study method.

Nonetheless, we hope that the results of this study pave the way for future investigations in this subject to inform the various stakeholders as to the time commitment necessary to ultimately publish surgical scientific research.

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DISCLOSURE
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