

## A Literature Analysis in Family Medicine and General Practice

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A discipline may be defined by its literature. The validity of the published work in family medicine is one basis for its acceptance as a discipline in the academic and scientific communities.<sup>1</sup>

The initial period of the growth of family medicine was marked by concentration on the practical aspects of designing and implementing new training programs. The discipline has now, by its own definition, entered into a phase of academic credibility achieved by a combination of scholarly work and institutional perseverance in the face of changing political and economic realities. This paper looks at the structure and origins of a sample of the published literature in family medicine to identify trends and stimulate discussion about the future direction of research, writing, and clinical practice.

The evolution of academic general practice in Britain has been different from that of family medicine in this country. Although there have been training programs in general practice in Britain since the late 1950s, general practice shares with family practice an upsurge in interest that took place in the late 1960s and early 1970s.<sup>2</sup> At present, there are small departments of general practice in most medical schools in Britain. Postgraduate training in general practice is now required if one is to become a principal in general practice in the National Health Service.

Our original question regarding the literature arose from an observation made during the authors' 6-month practice experience in the British National Health Service in Wales. In preparing for that experience, we were impressed that much of the published work of British

general practitioners seemed to originate with practicing physicians. There has been a tradition in Britain of research and scholarly work by practice-based general practitioners dating back to Snow, Jenner, MacKenzie, Pickles, and others, which has not found a parallel in this country. Curtis and Fowkes discussed some general types of family medicine research being undertaken in this country and contrasted them with types of research from Britain.<sup>3</sup> We expected to find differences in the stated primary work location of general practitioners publishing work in British literature when compared to that of family physicians in the literature from the United States. We also felt that an analysis of the literature would demonstrate differences in the content and nature of research being published in the two countries. An objective of our study was to describe these differences, as well as any similarities that exist. Judging the relative scientific value of papers in both journals was beyond the scope of our study.

The *Journal of the Royal College of General Practitioners (JRCGP)* has been for the past 20 years the major academic journal of general practice in Britain. The *Journal of Family Practice (JFP)* has been, since 1974, the recognized journal for scholarly work in family practice. McConaghey intended that the *JRCGP* "reflect general practice from within."<sup>4</sup> Geyman stated that the *JFP* was "conceived as a scholarly publication that (would) take an honest, unbiased approach in developing an expanded literature base for this specialty."<sup>5</sup> Each journal attempts to encourage research and thoughtful work by educators and practitioners. These two titles were chosen as journals that represent the spectrum of articles being published by generalists.

While Canadian, Australian, and New Zealand generalists have journals, we decided to focus on the US and British journals exclusively, feeling that they represent the most consistent attempts to publish original research done by generalists. This comparison of the *JFP* and *JRCGP* recognizes that these two journals do not represent the only publications by family physicians and general practitioners. They are, however, likely representative of the bulk of the published work in their respective fields.

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## Methodology

Three years, 1977 through 1979, of the issues of the *JFP* and the *JRCGP* were examined. To gather data, 656 articles from the journals were inspected to determine how each one fit the areas and categories described in this study. A total of 403 articles were taken from the *JFP* and 253 articles from the *JRCGP*. Excluded from scoring and analysis were editorials, communications, organizational committee reports, procedures, grand rounds, and international perspectives. Only articles in the main body of each journal were scrutinized.

Each article was scanned and scored according to predetermined areas and categories. The areas included:

*Location of the author*, determined by stated location of the first author: university, community hospital, practice, or other, eg, public official, task force member.

### Number of authors

*Content of articles*, divided into three categories:

1. Clinical: material relating to patient care
2. Educational: relating to predoctoral or graduate education in family medicine/general practice
3. Other: material covering a variety of topics not directly related either to clinical or educational categories, eg, legal, political, historical issues

*Structure of articles*, emphasizing the methodology used in each article representing the following categories:

1. Review article
2. Case report: defined as a study using less than 10 subjects
3. Cross-sectional analysis/questionnaire: described as a study at one point in time
4. Longitudinal retrospective: an analysis of data going backward in time, sometimes referred to as case-control studies
5. Longitudinal cohort/prospective: an analysis of data going forward in time without active clinical intervention
6. Clinical trial: an analysis of data going forward in time with some planned intervention in the clinical course using controls
7. Descriptive study: report that notes occurrences but make no attempt to determine causation
8. Opinion paper

Many of these research designs were discussed and defined by Fletcher and Fletcher in a review article of clinical research in general medical journals.<sup>6</sup> Froom<sup>7</sup> and Scherger<sup>8</sup> have also defined useful research design categories, and their work has indirectly influenced the definitions used in this study. Examination and coding of articles were done by the same individual, except in the few instances where designation of category or

structure seemed unclear. In that case, the other author was called on to do an independent reading and coding of the article based on the same predetermined categories and definitions.

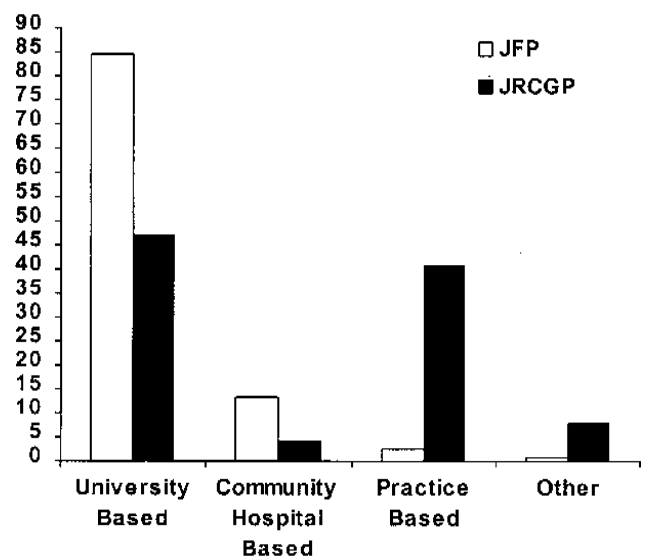
After the articles were coded, they were key punched and computer run. Each journal was analyzed separately and cross tabulated. A chi-squared test was used to determine statistical significance.

## Results

An analysis of the location of the primary author of articles revealed that there is a marked contrast between those of the *JFP* and the *JRCGP* (Figure 1). US authors came mostly from university-based programs (84.5%), a small number from programs identified as community hospital based, and only 2.5% of authors were practice based. On the other hand, 47% of the British authors were identified as primarily university based, and 40.7% were from practice. The distribution of the number of authors per article shows a significant ( $P < .001$ ) trend in the United States toward multiple authorship (Figure 2). Analysis of the content of articles also shows significant variation between the *JFP* and the *JRCGP*, with a higher percentage of educationally related articles in the United States (27.3%) than in the British (9.9%) literature in general/family practice (Figure 3).

Figure 1

Location of First Author



JFP—Journal of Family Practice

JRCGP—Journal of the Royal College of General Practitioners

The articles in the two journals also show significant variation in methodology ( $P < .001$ ); British literature heavily emphasized cross-sectional studies with, in addition, a large emphasis on descriptive studies and review articles (Figure 4).

The location of the author of an article (university, community hospital, or practice based) did not influence the content of articles or the method of research or reporting in the United States. This may be due to the small number of community-based or practice-based articles in the *JFP*. In Britain, there was a much more even distribution of university- and practice-based authors. Practice-based authors tended to be single authors and to present material that was more clinical in nature than did university-based authors. In both countries, single-author papers were more commonly reviews, descriptive articles, or opinion pieces. Papers with more than one author were more likely to describe cross-sectional studies. Similarly, the content of the article tended to influence the methodology used in both the US and British literature. If an article in the *JFP* was of a clinical nature, it was more likely to be a review or case report—if educational, a descriptive or cross-sectional study. In the *JRCGP*, if an article was clinical in nature, it was more likely to be a cross-sectional study or a clinical trial and if “other” (miscellaneous), a descriptive study or opinion piece. In both

journals, there was a dearth of prospective or controlled studies regarding educational topics. None were noted in the 3 years of the *JRCGP* studied.

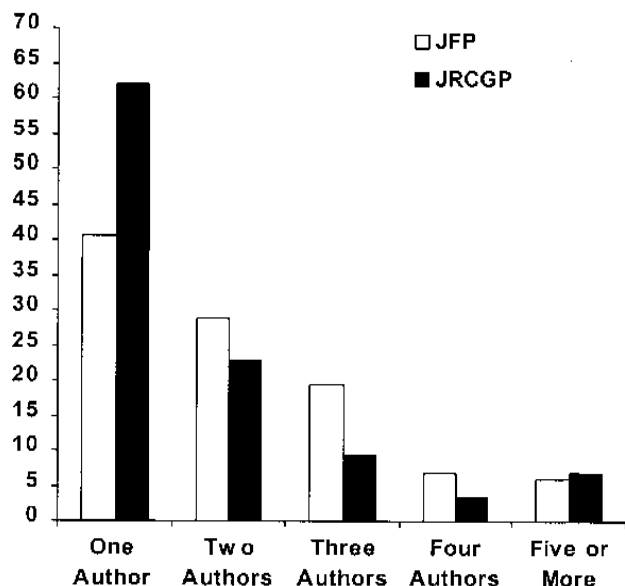
### Discussion

Our original hypothesis that there would be differences regarding the location of authors of the literature in general practice and family practice is supported by the data. During the period studied, the minimal number of articles by practice-based physicians in the *JFP* contrasts markedly with the high percentage of articles by practicing physicians in the *JRCGP*. Possible reasons for this difference must include the different tradition of training that marks the British and US educational systems in general practice. Until recently, the American Academy of Family Physicians has functioned primarily to give political and organizational support to academic family medicine rather than to stimulate practitioners to become contributors to the knowledge base of family medicine. The Royal College of General Practitioners is an organization that, along with the British Medical Association, has the dual purpose of representing the general practitioner before governmental bodies, as well as promoting scholarly work and education in the discipline.

In the United States, the reward system has traditionally included a better income and a large amount

Figure 2

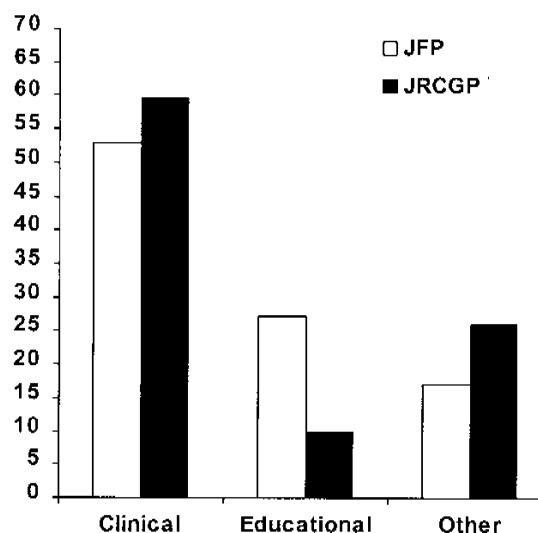
Number of Authors



JFP—*Journal of Family Practice*  
JRCGP—*Journal of the Royal College of General Practitioners*

Figure 3

Content of Articles



JFP—*Journal of Family Practice*  
JRCGP—*Journal of the Royal College of General Practitioners*

of autonomy for physicians in practice, while professional status has gone to academic physicians. With a much smaller proportion of full-time academics, Britain must rely on a closer relationship of the practitioner to the evolution of the knowledge base of general practice. For example, the editor of the *JRCGP* is a practicing physician, as are 9 of the 11 members of the editorial board. The editor, associate editor, and eight of the nine editors of the editorial board of the *JFP* are full-time academicians. Unless there are active attempts to get practicing physicians involved in writing and research, there can be no expectations that the current situation, with more than 95% of the literature in family medicine in the United States coming from predominantly university teaching programs, will change.

The tendency toward multiple authorship confirms a trend that has been increasing in the past decade. Fletcher and Fletcher pointed out that the average number of authors per paper in the general medical literature has doubled in the last 30 years.<sup>6</sup> Our study found that the average number of authors per article during the 3-year study period was 2.10 authors for the *JFP* and 1.69 for the *JRCGP*. A recent discussion of the hazards of multiple authorship and some of the reasons for its prevalence in the scientific literature sheds light on the academic pressures involved in the cultivation of bibliographies.<sup>9</sup> There are no ethical guidelines regarding the "significant" contribution that must be made to necessitate the inclusion of someone as a coauthor. However, such pressures might decrease the likelihood of a researcher's/writer's circulating and sharing ideas with colleagues for fear of needing to include such colleagues as authors in the final draft. Similarly, solo authors must take full responsibility for their work—from the data to the writing style—and such responsibility may often be too heavy.

Although Gray has noted that the decade of the 1970s was characterized by the theme of education in general practice,<sup>10</sup> the British literature still has significantly fewer articles that address educational topics. The large percentage of educationally related articles in the *JFP* perhaps reflects the fact that the journal was begun at a time of enormous growth of programs for training residents and students in family practice, although general practice in Britain has experienced a similar growth in recent years.

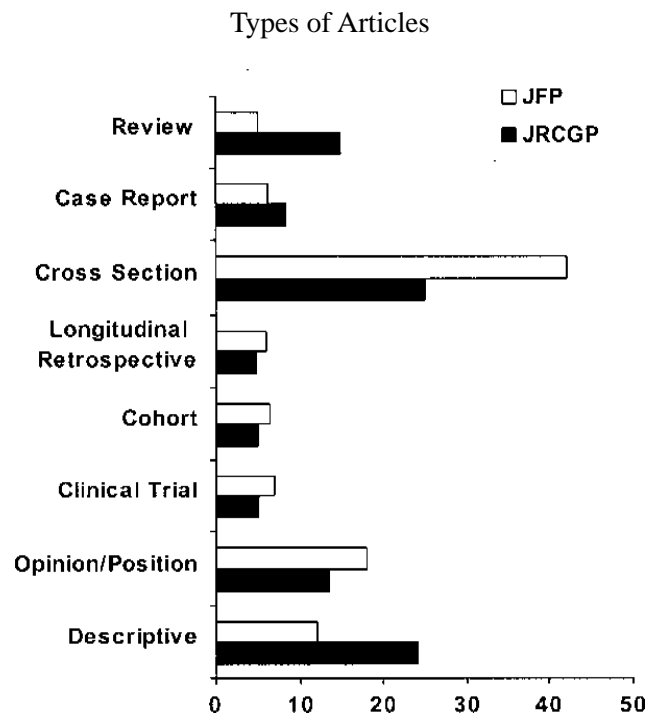
Fifty-eight percent of educational articles in the *JFP* are either descriptive or position papers, while 20% of clinical articles are of those two types. Sixty percent of educational articles are descriptive or position papers in the *JRCGP*, while 11% of clinical articles are of those two types. Neither journal demonstrates that educational research can use the same prospective design as that used in clinical research.

McWhinney, discussing the naturalist tradition in general practice that contributed to the description of

the natural history and epidemiology of illness, pointed out the value of long-term observational studies in the research history of general and family practice.<sup>11</sup> With the exception of Hames and Greco<sup>12</sup> in this country, there has been little or no tradition of observational research by family physicians in their practices. The mobility of both the patients and the doctors, the lack of defined populations to provide a reliable denominator, and the lack of emphasis placed on practice-based research in the United States are in marked contrast to general practice in Britain, where physicians are often in a single practice for their entire careers and where populations, with the exception of certain areas of large cities, are more stable and defined, and there is a tradition of practice-based research. However, given this potential of British general practice for long-term observational or prospective studies, the data in the present study do not support the hypothesis that these conditions produce a higher proportion of "better" quality research.

In our 3-year analysis, both the US and British literature represented by the two journals studied have a paucity of prospective observational studies or clinical

Figure 4



JFP—*Journal of Family Practice*

JRCGP—*Journal of the Royal College of General Practitioners*

trials. In this regard, the difference between the literature of the two countries is not statistically significant. While there are more practicing physicians doing writing and research in Britain, the amount of prospective research in the sample of the literature we have examined is not appreciably affected.

Additional analysis of each of the study years does not show any significant trend in either the British or the US literature. There is, however, a tendency toward increased percentage of cross-sectional articles and a decrease in opinion and descriptive pieces in the US literature over the 3-year period.

McWhinney has pointed out that family medicine is indeed an immature discipline.<sup>11</sup> He goes on to state that it must concentrate on technique, philosophy, and natural history to help it contribute to knowledge. The present study implies that technique is still immature, with a heavy emphasis on cross-sectional and descriptive studies. As for natural history, there is little evidence of long-term studies, either retrospective or prospective in design, that lend themselves to the naturalist observational research. The philosophy is inextricably linked to the first two areas of technique and natural history. If family medicine does in fact represent a philosophical departure from specialty-oriented medical education, then its literature should begin to reflect the difference. This difference is not altogether clear from the data in the present study. British general practice, with a longer history, still has progress to make in

many of the same areas as family practice in the United States. The challenge is whether generalists can begin to change the nature of their literature to reflect the change they have brought to education and patient care.

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