Prevalence of Registered Dietitians Publishing in Select Nutrition Journals

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Introduction

The increased need for registered dietitians (RDs) to be actively involved in publishing research is a relevant topic of discussion among leaders in the dietetic profession. In particular, the importance of research stems from the increasing prevalence of evidence-based practice (EBP). Hence, research is needed to develop these standards, which can improve patient outcomes, increase the likelihood for insurance reimbursement for dietetic services, as well as facilitate multidisciplinary team interaction. Furthermore, research conducted by RDs is relevant as it adds to the credibility and respect for the dietetic profession.

According to a 1998 study by Eck et al, most nutrition research was published by physicians or individuals with a PhD who were not RDs (1). Eck et al found 61% of research articles reviewed were published by a non-dietitian as a primary author and 83% did not have an RD as a coauthor. Various studies have sought to identify the barriers that have prevented RDs from engaging in research. Slawson et al surveyed clinical RDs, RD managers, and dietetic interns and found lack of support from administration and lack of available time to be the most common reasons why RDs did not perform research despite an interest and recognized need (2). Furthermore, surveyed RDs acknowledged they felt they did not have the necessary skills to conduct research; however, they were interested in obtaining those skills (2). Byham-Gray et al found RDs' perceptions, attitudes, and knowledge of EBP, as well as education level, to be the strongest predictors of research involvement (3).

Several studies have sought solutions and have made recommendations in an attempt to increase the level of RD participation in research. Byham-Gray et al proposed the increased use of EBP in clinical care as well as promoting its use in didactic education to encourage research participation (3). Collaboration between an experienced researcher and an RD was the top response among two surveys completed by RDs on how they would like to become involved in research (1,2). Furthermore, the 2002 Commission on Accreditation for Dietetic Education standards now require dietetic internships to provide foundation knowledge in research, to include knowledge of research methodologies, needs assessments, outcome-based research, scientific method, and quality improvement methods as well as the demonstrated ability to interpret current research and statistics (4).

Benchmarking from Eck's 1998 article, we hypothesize that the number of RDs publishing in 3 select nutrition journals as primary author is now greater than 40% and publishing as a coauthor is greater than 17%. Therefore, the purpose of this study was to look at three select nutrition journals and measure the current publication rate of RDs (primary and co-authors), the authors' educational and professional credentials and their geographical location.

Methods

Articles published between 2004 and 2005 in the *Journal of the American Dietetic Association* (JADA), *Journal of Parenteral and Enteral Nutrition* (JPEN), and *Nutrition: The International Journal of Applied and Basic Nutritional Sciences* (Nutrition) were reviewed for this retrospective study. JADA was included as it is published by the American Dietetic Association, which is the largest professional association to represent registered dietitians. JPEN was selected because of its high impact factor, an indicator of how robust the journal is in terms of publications and citations. The higher the impact factor, the stronger the journal and clinical emphasis. Nutrition was included to allow for the assessment of RDs publishing research on an international level. Inclusion criteria for the journals included publication in 2004 and 2005, an impact factor of greater than 1.5 as of 2005, accessibility of full-text articles via the Internet, and availability of the education and professional credentials, as well as the geographical locations and type of facilities associated with the articles' author(s). In addition, articles reviewed for authorship were required to be greater than one page in length and included original research, review, and case studies. Articles that appeared to be editorials or abstracts that were one page or less were not included in this study.

Data Collection

The journal articles were accessed via the Internet using Virtual Private Networking, aka VPN, in the nutrition department at a major university. The first page of each article that met inclusion criteria was printed for authorship analysis.

Table 1
Publishing Rate of RD Primary Authors in Three Select Nutrition Journals between 2004 and 2005

Journal	PA[a] an RD[b] Yes	PA an RD No	Total # of Articles
JADA[c]	182 (60%)*	122	304
JPEN[d]	12 (10%)	114	126
Nutrition[e]	18 (6%)	290	308

[a]PA=primary author, [b]RD=registered dietitian, [c]JADA=Journal of the American Dietetic Association, [d]JPEN=Journal of Parental and Enteral Nutrition, [e]Nutrition=Nutrition: The International Journal of Applied and Basic Nutritional Sciences, *p<0.001.

Statistical Analysis

Descriptive statistics, χ^2, and 1-way analysis of variance (ANOVA) were used to analyze the data. All data were analyzed using SPSS vs 14.0 (SPSS Inc., Chicago, IL, 2006) and $p<0.05$ was used to define significance.

Results

Forty-two percent of the total articles (n=738) reviewed were from Nutrition, 41% from JADA, and 17% from JPEN. An RD was the primary author of 28.7% of the articles, and 34.1% of the articles had an RD as a coauthor (Figure 1). JADA (182 out of 304) (60%) had significantly more RDs publishing as a primary author compared to JPEN (12 out of 126) (10%) and Nutrition (18 out of 308) (6%) ($p<0.001$) (Table 1). Additionally, the mean number of coauthors was significantly different between journals (JADA 1.8 ±1.2, JPEN 1.2±0.5, Nutrition 1.5±0.8) ($p<0.05$).

The majority of the RDs publishing research had advanced degrees. Ninety-three (44.1%) of the 212 primary authors had a PhD, 65 (30.8%) had an MS degree, and 10 (4.7%) had a DrPH degree. Comparatively, 185 (43%) of the 426 coauthors had a PhD, 90 (21%) had an MS degree, and 78 (18%) had a BS degree. The specialty credentials (such as Certified Specialist in Renal or Certified Nutrition Support Dietitian) of RDs publishing were not significantly different between primary and coauthors, as 91.9% of the primary authors and 92.9% of the coauthors did not have a professional credential in addition to RD. Among RDs with an additional professional credential, Fellow of the American Dietetic Association was the most common as 4.3% of the primary authors and 4.0% of the coauthors had this credential.

Within the United States, primary authors from California, Pennsylvania, and Tennessee published the most research with 13 (6.2%) authors from each of these states. Iowa, Ohio, and Texas each had 11 (5.2%), and Illinois had 9 (4.3%) primary authors. For coauthors publishing in the U.S., Pennsylvania had the greatest prevalence with 25 (5.9%) RDs, Minnesota had 23 (5.4%), and Massachusetts had 22 (5.2%) RDs.

Twenty primary authors were located outside the United States. Canada had 9 (4.3%), Europe had 6 (2.8%), Asia had 3 (1.4%), and South America had 2 (0.9%). Forty-eight coauthors outside the U.S. published articles with 27 (6.3%) of the coauthors from Canada, ten (2.3%) from Europe and six (1.4%) from South America. One hundred and sixty (75.8%) primary authors were affiliated with a university. Sixteen (7.6%) primary authors published their research while working at a community hospital and 12 (5.7%) from a university medical center. Two hundred seventy (63.4%) coauthors were affiliated with a university. Forty (9.4%) coauthors were based out of a community hospital and 32 (7.5%) were employed by a government agency.

Discussion

The results of this study indicate a paucity of research is being published in JADA, JPEN and Nutrition by RDs. In particular, the percentage of RDs publishing as primary authors is less than that of RDs publishing as coauthors. Hence, we must reject our hypothesis that the dietitian as a primary author is now greater than 40%; however, we can accept our hypothesis that RDs as coauthors are publishing greater than 17%. Moreover, RDs outside the United States published more research as a coauthor than primary author. From this finding stems the question as to why RDs are taking a supportive role rather than a lead role in conducting research. Eck et al and Slawson et al (1,2) found RDs' lack of time and research skills to be key deterrents to conducting research; therefore, assisting with a study in a minor role may seem more feasible and provides a less intimidating approach for RDs to participate in the research process.

For RDs authoring research articles, certain nutrition journals had a higher RD publishing rate than others. Our study indicates JADA published a significantly greater number of articles with RDs as primary authors and coauthors compared to JPEN and Nutrition. This may be because RDs are submitting more articles to JADA, or JADA is more likely to accept articles authored by RDs. If it is indeed true that RDs are reluctant to submit articles to other nutrition journals, they may be limiting their credibility with other health professionals as their research is not reaching a varied yet relevant audience. If JPEN and Nutrition rarely accept articles authored by RDs, it would be of interest to the dietetic profession to determine why this is occurring and identify ways to overcome this hindrance.

Among RDs, our study found those with advanced academic

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degrees published the most research. While this finding might indicate RDs without advanced degrees are not involved in research, it is possible RDs are conducting research, but the results are not being published. Gardner et al found a significant relationship between clinical management RDs with advanced degrees and their increased involvement in outcomes-based research (5); however, the study also found nearly all research conducted by the RDs was not being published in peer-reviewed journals. Furthermore, our study indicates that professional dietetic credentials beyond that of RD are not needed to publish research, as almost all of the RD authors did not have additional specialty credentials related to dietetics.

Within the United States, our study found some states had a greater prevalence of RDs publishing research. This may be related to a greater number of universities located in these areas, as most research published by RDs was conducted in a university setting. In addition, these locations may be major health research hubs that provide an environment conducive to RDs' participation in research. Further research is warranted to determine the factors contributing to this occurrence, as the findings could be used to encourage RD participation in published research studies.

Although our numbers were very small in this area, outside the United States, our results provide a glimpse that RDs in westernized regions published the most research. These findings may be due to the prevalent use of modern, research-based medicine in these areas. However, as our study only included individuals with an RD credential, individuals who published research from countries that do not recognize or require the RD credential but work in a similar capacity were not accounted for; hence, the quantity of published research may be understated from these countries. This was a major limitation to the study.

Other studies have assessed the publishing rate among RDs as Eck et al (1), Slawson et al (2), and Gardner et al (5) examined the publishing rate and identified common barriers preventing participation in research by clinical RDs. Our study was different because we included all articles published by RDs, not just those working in a clinical setting. However, the study by Eck et al (1) was similar to ours as it also reviewed articles published in three research journals, two of which were used in this study. As we sought to examine publishing rates among international RDs, we included an international journal in place of a clinical journal used by Eck et al (1). The findings of all of these studies arrive at the same conclusion: RDs have been and continue to be underrepresented in the research process, both in conducting and publishing research.

Collaboration between an RD and an academic RD, or one with research experience, has been identified as a possible way to increase RDs' participation in research (1,2,5). In addition, Gardner et al recommends clinical RDs collaborate with other healthcare professionals to form interdisciplinary research teams (5). Not only is such a team more likely to gain hospital administrative support, but it will improve the respect and credibility of RDs with the other team members. Besides encouraging research among practicing RDs, it is important that didactic nutrition programs, at both the undergraduate and graduate level, provide students with the knowledge and skills needed to conduct research. Steiber and Barkoukis (6) and Hays et al (7) describe two academic programs that provide hands-on research experience to students and practicing RDs, most of whom work in a clinical setting. An RD and student are paired together, after which they complete a research project under the guidance of the class instructor. Not only is such an opportunity likely to empower current RDs to conduct research, but it can promote research as part of the standard scope of practice for future RDs.

Conclusions and Applications

The dietetic profession would reap a tremendous benefit from RDs' increased participation in conducting and publishing research. In addition to developing standards for EBP, involvement in research will enhance RDs' recognition in the health care environment as credible and valued health care providers. Currently, it appears that the best way to improve RDs' participation in research is through collaboration with an experienced research RD or with a multidisciplinary team of health care providers. ◆

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