Gender-Related Trends in Authorship for Health Education Journal Articles (1990-1998)

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Abstract

This study answers three questions: 1) Do health education journals publish significant numbers of articles by women?, 2) Did the number of articles published by women change during the 1990's?, and 3) How do publication rates for women in health education compare to those in other fields? The proportion of articles to which women contributed was impressive (65-85%). Trends in publication by gender did not change considerably between 1990-1998. Compared to women in other scientific disciplines, women in health education are publishing more.

KEYWORDS: journal articles, gender differences
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Introduction

Scholarly productivity, defined as the dissemination of scholarly information through published articles, is a primary expectation of faculty in today's competitive climate of higher education. Productivity is important because it is linked with promotion and tenure, merit pay raises, grant dollars, graduate student recruitment, and prestige, among other things.

Several researchers have examined differences in scholarly productivity in higher education by field of study (Hicks, 1995), career age (Jones, Jones & Preusz, 1991), rank (Ostmoe, 1986), family responsibilities (Carr, Ash, Friedman, Scaramucci, Barnett, Szalacha, Palepu, & Moskowitz, 1998), and size and type of academic institution (Blau, 1973; Blackburn, Behymer, & Hall, 1978). A few scholars in physical education have examined authorship trends by gender and concluded that significant differences exist, but many contemporary questions remain unanswered (Kovar & Overdorf, 1995; Safrit, 1979 & 1984; Schuitman & Knoppers, 1987; Widom & Burke, 1978).

Given that health-related fields typically employ a sizeable proportion of women faculty (Dickersin, Fredman, Flegal, Scott, & Crawley, 1998) and that research from other fields has demonstrated significant gender differences in publication rates (Kovar & Overdorf, 1995; Safrit, 1979 & 1984), it is important to examine gender differences in publication trends in health education and related journals. It is not clear whether ample publication opportunities exist in health education, whether our field differs from other fields, or whether variation exists between the journals in our field. It is possible that the 1990's have provided increased opportunities for women, growth in the number of journals that publish articles about women's issues, improved mentoring tactics, and an awareness of gender-based publication biases may provide a platform for increased scholarly productivity among women in higher education.

The purpose of this paper is to examine gender-related publication trends in 7 health education journals during the past 9 years (1990-1998). This paper seeks to answer three questions related to publication trends in health-related journals: 1) Do health education journals publish significant numbers of articles by women?, 2) How does the rate of publication by women in health education journals compare to that in other fields?, and 3) Has the number of articles published by women in health education journals changed during a nine year period (1990-1998)?

Methods

Journal Selection. Table 1 contains a list of seven (7) journals that were selected for inclusion in this study. All journals were selected based on their affiliation with a professional organization and their appearance in publications citing prominent journals in our field (Laflin, Horowitz, & Nims, 1999; Ransdell, Sedlacek,

Kennedy, Gallegos, & DeVoe, 1998).

Table 1: Health Education & Promotion Journals Examined for This Study.

Name of Journal	Number of Citation Indices in Which Journal was Included[a]	Journal Acceptance Rate (%)[a]	Circulation[a]
American Journal of Health Behavior (Formerly Health Values)	16	23	2,200
American Journal of Health Promotion	22	35	5,000
Health Education & Behavior (Formerly Health Education Quarterly)	25	15	3,100
Journal of American College Health	23	20	3,000
Journal of Health Education	14	25	3,000
Journal of Health & Social Behavior	14	28	3,605
Journal of School Health	32	30	7,500

Key. N/A = not available
[a] Information gleaned from Laflin, Horowitz & Nims (1999) and Ransdell et al. (1998).

Determination of Gender-Related Publication Trends. Research articles from the selected journals were hand-searched by two trained investigators for authorship during the years 1990-1998, using methodology suggested by Everett, Casler, & Summers (1994). Editorials, book reviews, and abstracts were excluded from the analysis. A frequency count was performed by placing each authors name, citation, and authorship position on an Excel (Office '97 Version) computer file in alphabetical order. For each year and each journal, index cards were kept for the total number of fe male and male authors, female and male first authors, and number of articles to which a woman contributed. Gender of the author was determined assuming common usage and spelling of the first name. Names for which gender could not be reasonably ascertained (approximately 7% of the total sample) were not included in the analysis.

Based on the author information obtained, three calculations were performed: 1) *percentage of women authors* (an overall assessment of the representation of women as authors), 2) *percentage of articles with a woman as first author* (an estimate of the leadership role that women take as authors), and 3) *percentage of articles to which a woman made a contribution* (an estimate of the influence of women based on their participation in the article publication process). *Percentage of women authors* was calculated by dividing total number of women authors by the total number of authors and multiplying by 100. *Percentage of articles with a women as first author* was calculated by dividing total number of articles with women first authors by total number of articles and multiplying by 100. *Percentage of articles to which a woman made a contribution* was calculated by dividing the number of articles with at least one woman author by the total number of articles and multiplying by 100.

Reliability & Validity. To assure the consistency of the findings, inter-rater and intra-rater reliability were calculated. To ascertain inter-rater reliability, a random sample of 10% of the journals was selected and re-coded by the researchers. The inter-rater reliability was 95%. To ascertain intra-rater reliability, a random sub-sample of 10 journals was chosen for re-analysis. One

week after these journals were coded for the first time, each researcher coded them a second time. The mean intra-coder reliability was 99%.

Content validity was established for the author coding procedure as recommended by McKenzie, Wood, Kotecki, Clark, & Brey (1999). First, a literature review on appropriate methodology for assessing scholarly productivity was conducted. Next, a panel of experts was asked to review the coding sheet for appropriateness, clarity and completeness. After feedback was received from the experts, the coding sheet was revised, pilot tested, and implemented.

Results

Figures 1-7 present the percentage of women authors and the percentage of articles with women contributors in our sample of 7 journals. In all journals, across the years examined, the percentage of *articles* with women contributors was larger than the total percentage of women *authors* (71% vs. 48%, respectively).

Trends in publication by gender did not change considerably between 1990-1998, thus women authors did not experience any significant gains or losses in authorship representation for these selected journals. Figure 8 presents a comparative summary for authorship trends of all journals and all years combined. From 1990 to 1998, the journals with the highest overall percentage of women authors were *Journal of School Health* (60%), *Health Education & Behavior* (51%), and *Journal of American College Health* (50%). Five (5) journals had women contributors for 70% or more of their articles. The journals that published the highest percentage of articles with women first authors were *Health Education & Behavior* (59%), and *Journal of School Health* (59%). *Health Education & Behavior*, the journal with the lowest acceptance rate (15%), had the largest proportion of articles with women first authors.

Figure 1: **Gender Related Authorship Trends in the *Journal of American College Health***

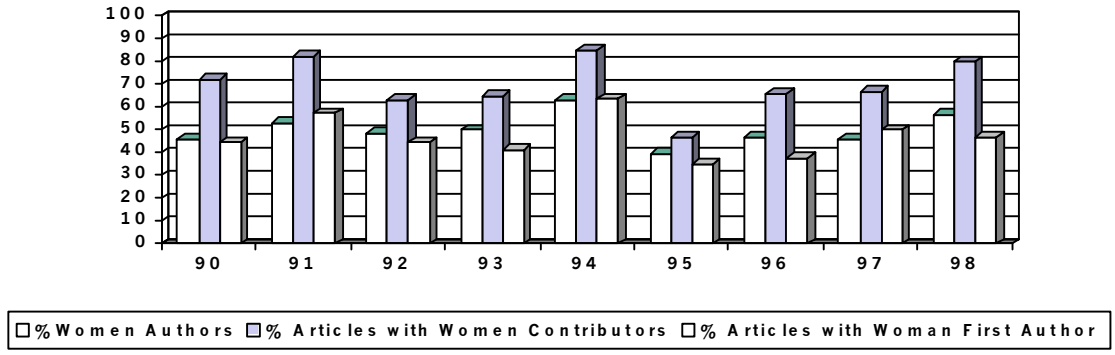


Figure 2*: Gender Related Authorship Trends in the *Journal of Health and Social Behavior

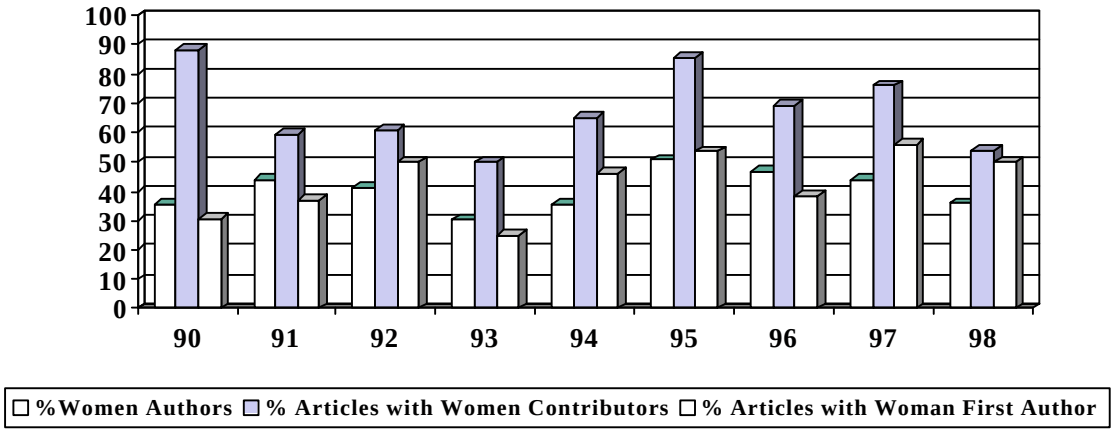


Figure 3*: Gender Related Authorship Trends in the *American Journal of Health Behavior

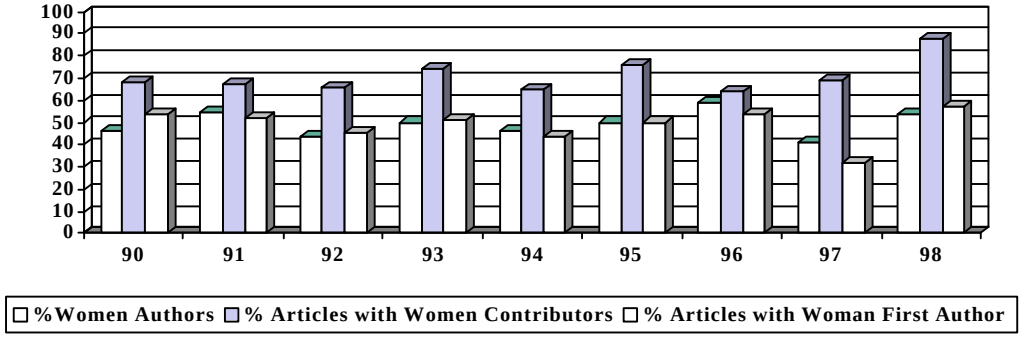


Figure 4: **Gender Related Authorship Trends in the *American Journal of Health* Promotion**

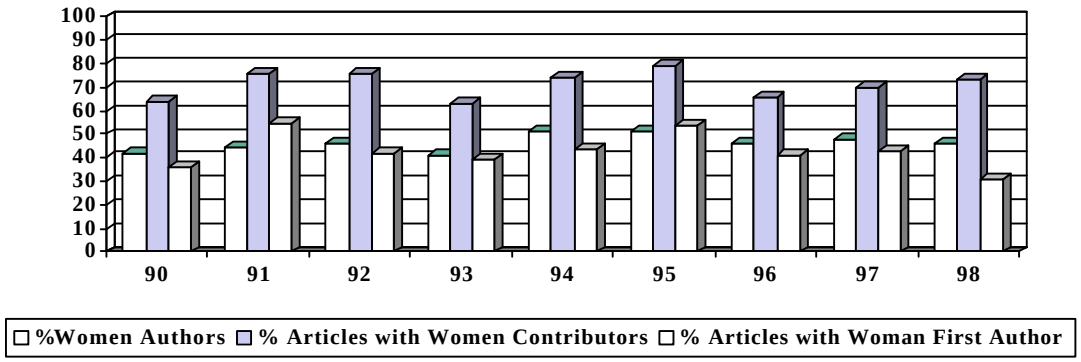


Figure 5: **Gender Related Authorship Trends in *Health Education and Behavior***

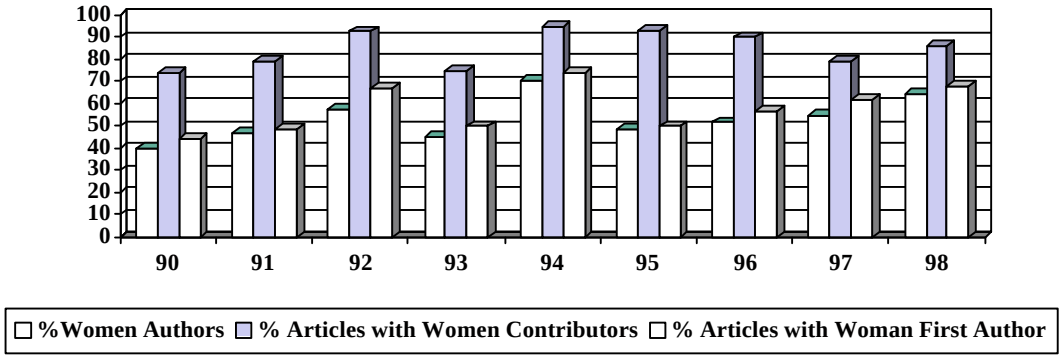


Figure 6: **Gender Related Authorship Trends in the *Journal of Health Education***

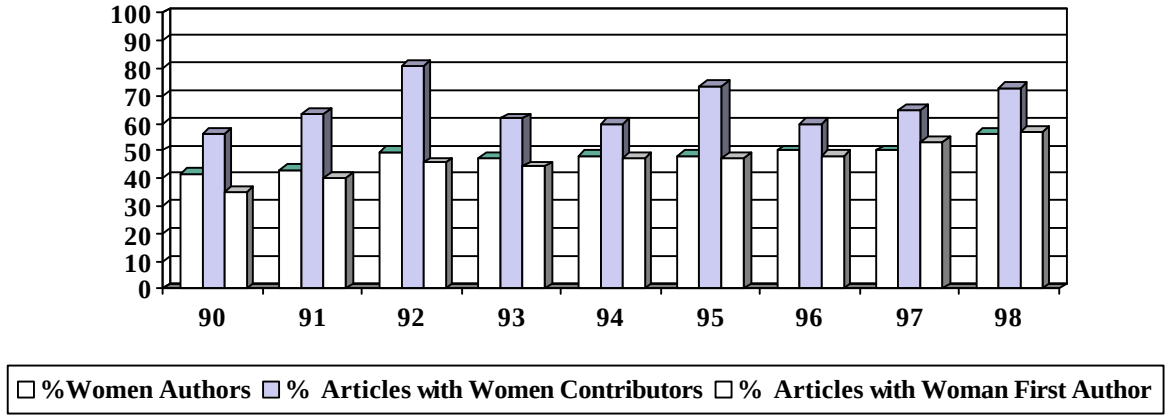


Figure 7: **Gender Related Authorship Trends in the *Journal of School Health***

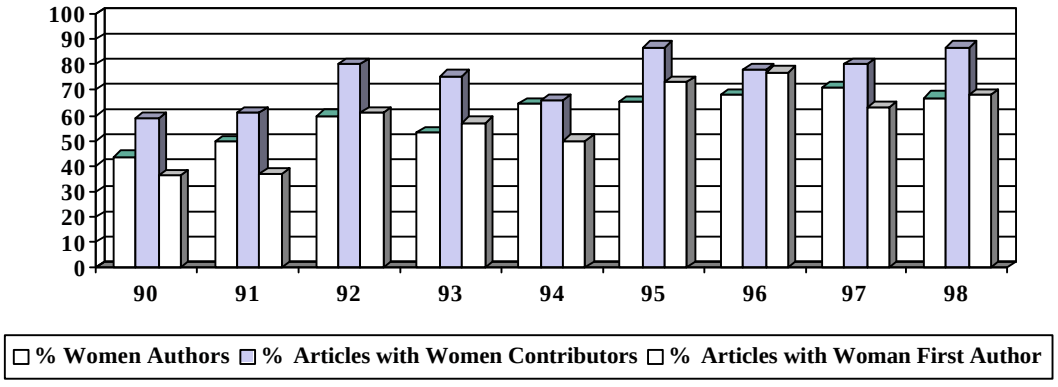
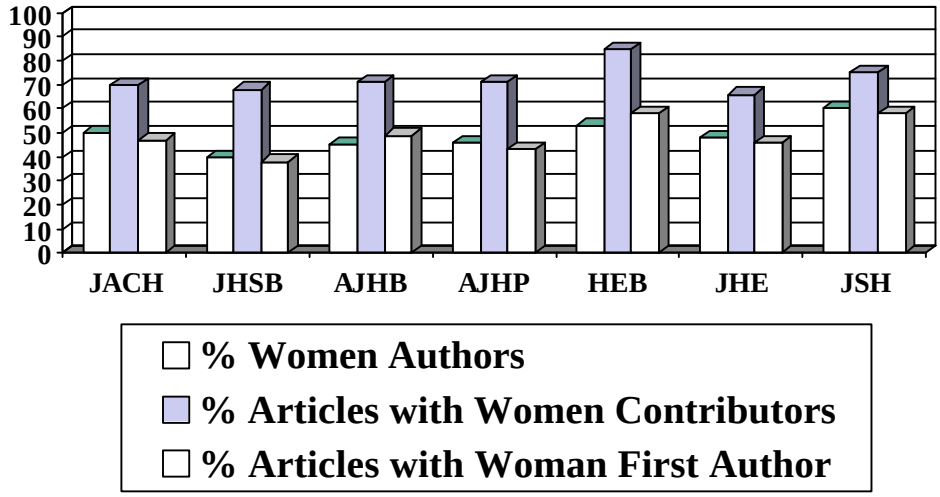


Figure 8: **A Comparison of Gender Related Trends in Authorship Across Journals**



Discussion

This study was designed to examine publication trends in health education journals. Significant findings include that: 1) approximately half (48%) of the authors in health education journals were women, 2) approximately ¾ (71%) of the articles examined had women contributors, 3) fifty percent of the articles examined had women first authors, and 4) the percentage of articles published by women in health education has remained relatively constant, with few upward or downward trends, during the nine years examined.

The gender distribution of authorship can be differentially interpreted depending upon which data are included and whether one is more concerned with the percentage of women authors or the percentage of articles to which a woman contributed. To state that 71% of the articles from selected health journals had women contributors is more impressive than stating that 50% of the articles had women first authors or 48% of the authors in those journals were women.

Regardless of how the statistics are packaged, it is noteworthy that women contributed to over 70% of the articles published in our select sample and that 50% of the articles had women as first authors. Furthermore, 48% of the overall authors were women. These findings are congruent with the fact that approximately 76% of graduate students in health related fields in 1996 were women (Council of Graduate Schools, 1999) and that nearly 40% of women faculty in health-related fields in 1991 were women (Dickerson et al., 1998).

Compared to others who have examined this issue in a variety of fields, our results are encouraging. In a study similar to this, Ransdell, Beske, Cooke, and Dinger (in review) reported that 49% of the articles in exercise science had women contributors and 38% of the authors were women. Dickersin and colleagues (1998) reported that only 29% of the authors in the field of epidemiology were women. Safrit (1978) examined publication trends in exercise science in the late 1970's and indicated that only 17% of the authors in *Research Quarterly for Exercise & Sport* were women.

Several factors may contribute to the large number of women who are represented as authors in articles for this study. These include an increase in the number of women pursuing graduate work in health-related fields, an increase in the number of women securing employment at research-oriented colleges and universities, better mentoring, improved acceptance of a woman's role as a scholar, and an increase in funding related to women's health issues. Additionally, there has been an increase in venues for publication of

feminist scholarship. The addition of journals such as the *Journal of Women's Health* and *Women's Health Issues* and the publication of theme issues related to women's health present fruitful outlets for the publication of studies.

The findings from this study are not without limitations. Our sample was limited to 7 health education and related journals. This sample should be adequate to ascertain internal validity, but each journal may have specific publication characteristics. It may be premature to conclude that these trends in gender-specific publication are generalizable to the rest of the journals in the field.

Future investigations may wish to examine several additional aspects of scholarly productivity. First, researchers should examine scholarly productivity from a broader perspective. *Quality* as well as *quantity* of an author's contributions should be examined. Second, studies should examine the relationship between productivity and the climate and gender distribution of the health education department in which a scholar resides. Third, researchers should examine factors related to success in publication for these women scholars (i.e., mentoring, committee work, teaching loads, etc.) Fourth, researchers should examine the citation index to determine the *impact* (i.e., number of times the paper was cited) of the articles written by the most prolific women scholars in our field. Lastly, researchers should examine whether the predominant gender of the editorial staff is related to the percentage of women and men who publish articles—especially as it relates to the percentage of women and men who submit articles for consideration.

Conclusion

We reported that 48% of the authors in the sample of 7 health education and related journals for this study were women. Further, 71% of the articles from these journals had women contributors and 50% of the articles had women as first authors. Publication trends have been consistent during the nine year period examined.

Our results provide solid evidence that the status and influence of women scholars (as indicated by publication rate) in health education is higher than that of women in other fields such as epidemiology and the movement sciences (kinesiology).

Clearly, these findings have implications for developing a model for the rest of the academy-- which currently struggles with inequitable authorship representation in some fields. Additionally, these findings provide a springboard for future studies that are designed to answer questions such as: Why is the number of women authors and contributors in health education so much higher than in other fields? What can we learn from successful women scholars in our field? How does training and mentoring of women differ in our field compared to others? Do graduate programs in health related fields differ in their philosophy of training women scholars?

It is the hope of the authors that readers will use this information to design studies to learn more about the keys to scholarly productivity, and that they will continue to foster publication skills in women faculty and graduate students so that health-related fields can continue to serve as a model for equitable graduate student and faculty training.

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