



Classic

Do Clinical Librarians Matter? The First Randomized Controlled Trial in Librarianship

A review of:

Marshall, Joanne Gard, and Victor R. Neufeld. "A Randomized Controlled Trial of Librarian Educational Participation in Clinical Settings." Journal of Medical Education 56.5 (1981): 409-16.

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Abstract

Objectives – To determine whether clinical librarian services cause healthcare providers to change their information seeking behaviors. To evaluate librarians' educational roles for clinicians, patients, and patients' families.

Design – Randomized controlled trial.

Setting – An academic, health-sciences-center, teaching hospital in Canada.

Subjects – A total of eight teams, each consisting of at least eight members who represented at least three different types of health professionals. Four teams

(rheumatology, obstetrics, neurology, and pediatrics) were randomized into the intervention group to receive clinical librarian services for a six-month period, and four teams (hematology, diabetic day care, pain clinic, and community psychiatry) were randomized into the control group that did not receive clinical librarian services.

Methods – Two half-time clinical librarians attended the intervention groups' rounds, clinics, and conferences identified as having educational components or where questions would likely arise related to patient care. The two clinical librarians handled 600 perceived or actual information requests, delivered 1,200 documents, and provided over 3,000 references during the twelve-

month study period of September 1978 to August 1979. The typical service consisted of the clinical librarian securing one or two articles relevant to the question raised along with pertinent references placed in a "hot topics" ring binder located in the clinical wards. Healthcare providers were alerted to or reminded about the clinical librarian service through a brochure and an exhibit. The brochure also advertised the clinical librarian service to patients or their families. Approximately 24% of all information requests fielded by the clinical librarians originated from patients or their families. The remaining information requests originated from physicians (40%), allied health professionals (21%), and nurses (15%) belonging to these interdisciplinary intervention group teams.

Main Results – Trained impartial interviewers conducted in-depth interviews with members of both the intervention group teams and the control group teams immediately following the first six-month study period and then again three months after the end of the study period. Following the initial six months of the study period, 67% of the members of the intervention group compared to 37% of the members of the study group used the library's reference services. Three months after the study period had ended, 76% of the members of the intervention group compared to 49% of the members of the study group had used the reference services. The authors reported in a one-sentence page note that these findings were statistically significant beyond the .05 level as measured by chi-square and analysis of variance tests. Three months after the study period had ended, 60% of the members of the intervention group compared to 38% of the members of the study group reported rating highly the use of library resources. In addition, three months after the study period had ended, 36% of the members of the intervention group compared to 27% of the members of

the study group reported rating highly the use of reference librarians. Although patients or their families were generally positive in rating the clinical librarians' services, they proved to be a difficult population upon which to conduct a comprehensive follow-up evaluation study once patients had left the hospital.

Conclusion – The authors conclude that the clinical librarian services to the four intervention groups had changed the group members' information seeking behavior.

Commentary

Clinical librarian programs emerged during the early 1970s, surrounded with great enthusiasm among medical librarians. Several retrospective cohort studies or case studies attempted to determine the actual usefulness of these clinical librarian interventions. One such study even combined a cohort study with a cost-benefit analysis. Yet, the utility of clinical librarian programs could not be proven (Schnall and Wilson). Staudt, Halbrook, and Brodman in 1976 published a retrospective cohort study that evaluated a clinical librarian program. They used the phrase "an attempt at evaluation" in their title and they concluded with some apparent frustration that, despite the methodological rigor of their cohort study effort, "The worth of clinical librarians' programs has not yet been proved quantitatively or unequivocally" (238).

This important applied research question seemed unanswerable until Marshall and Neufeld utilized the more appropriate randomized controlled trial (RCT) method for answering this intervention question more successfully. Current EBLIP levels of evidence indicate that an RCT represents the highest level of evidence for a single study to answer an intervention question (Eldredge "Levels of Evidence"). During

1978, however, the authors were pioneering an RCT when no other RCT had ever been applied to a library practice research question (Eldredge "Trial Design").

To pioneer an RCT to answer an important question alone would constitute an important landmark event for our profession. Equally important, Marshall and Neufeld adapted the RCT design innovatively to evaluate the effectiveness of the clinical librarian program by using clinical teams as the unit for randomization, while measuring individual responses to questionnaires as the unit of statistical analysis. RCTs date back to 1948, but in 1981 were still relatively rare within clinical medicine as compared to 2007. A *PubMed* search using RCTs as a publication type reveals that there were almost 11,000 RCTs published during the decade leading up to the Marshall and Neufeld RCT, whereas the past decade has witnessed over 126,000 published RCTs. The predominant model for an RCT during 1978, then just as now, principally involved administering drugs to individual patients and then comparing any effects of the drugs on the intervention group members compared to control group members. Marshall and Neufeld demonstrated a profound understanding of research methodology in order to apply the RCT so appropriately in a different context. Even when viewed today, with the RCT method now far more developed and better understood, their adaptation represents a significant achievement.

Two systematic reviews published in 2003 and 2004 evaluated clinical librarian programs by synthesizing the available research literature. A 2003 systematic review (SR) by Winning and Beverly covered the years 1983-2002 due to the expressed desire of the authors to *update* Cimpl's narrative review published in 1985. By their own reckoning, however, they noted that Cimpl's work had been based on a selective

collection of studies so it could not even approximate the comprehensiveness of an SR. Winning and Beverly's inclusion criteria therefore excluded the Marshall and Neufeld 1981 study by two years. This starting date for Winning and Beverly's SR seems unnecessarily arbitrary considering the more inclusive approach of a second SR published in 2004.

This second SR by Kay Cimpl Wagner and Gary Byrd was far more comprehensive (1974-2002) than Winning and Beverly in its search of the literature. Wagner and Byrd noted importantly that the Marshall and Neufeld RCT was one of only four studies that displayed methodological rigor by "using historically controlled before-and-after methods or comparison control groups" (30). A third SR published during 2005 by Alison Weightman and Jane Williamson reviewed the impact of library services on patients and on the specific dimension of time saved for clinicians. Weightman and Williamson's SR included the aforementioned 1976 study by Schnall and Wilson, but consciously excluded the 1981 Marshall and Neufeld RCT since it did not report any patient outcomes (21). This explicit exclusion in Weightman and Williamson's SR can be defended methodologically (Mulrow and Cook).

The Marshall and Neufeld study stands out as the only RCT to evaluate a clinical librarian program, thereby representing the highest form of evidence in answering an intervention question. One could find ways to improve upon this RCT by using more advanced methodological approaches available to us now such as minimizing contamination between groups and instituting more detailed measures. Yet, it seems most noteworthy that our profession has failed even to utilize a single RCT since then to answer what our profession considers to be the important question on the efficacy of clinical librarian programs!

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