



*Evidence Summary*

**Diagnoses, Drugs, and Treatment Are the Main Information Needs of Primary Care Physicians and Nurses, and the Internet Is the Information Source Most Commonly Used to Meet These Needs**

**A Review of:**

Clarke, M. A., Belden, J. L., Koopman, R. J., Steege, L. M., Moore, J. L., Canfield, S. M., & Kim, M. S. (2013). Information needs and information-seeking behaviour analysis of primary care physicians and nurses: A literature review. *Health Information & Libraries Journal*, 30(3), 178-190. <http://dx.doi.org/10.1111/hir.12036>

**Reviewed by:**

Carol Perryman  
Assistant Professor  
Texas Woman's University  
Denton, Texas, United States of America  
Email: [cp1757@gmail.com](mailto:cp1757@gmail.com)

**Received:** 27 May 2014

**Accepted:** 6 Aug. 2014

© 2014 Perryman. This is an Open Access article distributed under the terms of the Creative Commons-Attribution-Noncommercial-Share Alike License 4.0 International (<http://creativecommons.org/licenses/by-nc-sa/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly attributed, not used for commercial purposes, and, if transformed, the resulting work is redistributed under the same or similar license to this one.

---

**Abstract**

**Objective** – To improve information support services to health practitioners making clinical decisions by reviewing the literature on the information needs and information seeking behaviours of primary care physicians and nurses. Within this larger objective, specific questions were 1) information sources used; 2) differences between the two groups; and 3) barriers to searching for both groups.

**Design** – Literature review.

**Setting** – SCOPUS, CINAHL, OVID Medline, and PubMed databases.

**Subjects** – Results from structured searches in four bibliographic databases on the information needs of primary care physicians and nurses.

**Methods** – Medical Subject Heading (MeSH) and keyword search strategies tailored to each of four databases were employed to retrieve items pertinent to research objectives. Concepts represented in either controlled or natural language vocabularies included “information seeking behaviour, primary health care, primary care physicians and nurses” (p. 180). An initial yield of 1169 items was filtered by language (English only), pertinence to study objectives, publication

dates (2000-2012), and study participant age (>18). After filtering, 47 articles were examined and summarized, and recommendations for further research were made.

**Main Results** – Few topical differences in information needed were identified between primary care physicians and nurses. Across studies retrieved, members of both groups sought information on drugs, diagnoses, and therapy. The Internet (including bibliographic databases and web-based searching) was the source of information most frequently mentioned, followed by textbooks, journals, colleagues, drug compendiums, professional websites, and medical libraries. There is insufficient evidence to support conclusions about the differences between groups. In most research, information needs and behaviours for both groups have been discussed simultaneously, with no real distinction made, suggesting that there may not be significant differences even though a few studies have found that nurses' emphasis is on policy and procedures. Barriers to access include time, searching skills, and geographic location; for the last, improvements have been made but rural practitioners continue to be adversely affected by limited access to people and resources.

**Conclusion** – Both primary care physicians and nurses seek information on diagnosis and treatment. The Internet is of increasing utility for both groups, but all resources have advantages and disadvantages in identifying evidence based information for use in practice. Further research is required to support access and use of evidence based resources, and to explore how focused, evidence based information can be integrated into electronic health record systems.

### Commentary

Authors extracted studies from a much broader literature on the information needs, behaviours, and barriers to access of practitioners across all areas of healthcare. Barriers to information needed for direct patient care have long been understood to

include time and access to resources, but the explosive growth of health technology supports the need for further research on information behaviour in the rapidly changing environment of care.

Two critical appraisal instruments were used to evaluate this study (Glynn, 2006; Perryman, 2009).

Search strategies were clearly detailed (Table 1). MeSH and natural language were used in searching, but there was no discussion of how natural language terms were acquired, tested, and compiled. Syntax was reported for all databases except OVID Medline, with no explanation for the omission. Insufficient use of controlled vocabulary and synonyms and no use of truncation for key concepts severely limited comprehensive retrieval. For example, only two major headings were used in a CINAHL search: "information seeking behavior" and "nurses," while SCOPUS searches used keyword-only searches in the title, abstract, and keyword fields, as well as extremely limited use of synonyms. Use of additional synonyms (e.g., search\*, seek\* retriev\*, doctor, nurs\*, and primary practice) in all databases would have provided a far larger set of items for study. Also missing were definitions of terms used to categorize topics of information needed, and any explanations of validation processes conducted during filtering.

No qualitative assessment of the articles described was performed, and based upon the inconsistency of the literature being examined, the authors were of necessity confined to a limited review. A claim is made that information behaviours and needs are similar across geographical boundaries, but there is no evidence to support this contention. A 2011 study sponsored by the European Center for Disease Control (ECDC) concluded, in part, that "differential access and use is apparent both within countries and between countries in the European Union" (Higgins, Sixsmith, Barry, & Domegan, p. 1). Within the authors' own final set of articles, several support the ECDC conclusion, particularly the Norbert and Lwoga study (2012, citation not provided)

which found that a poor technology infrastructure and uncertain power provision frequently hampered access; another study (Davies, 2011) comparing physicians in the United States, England, and Canada concluded that physicians in the United States and Canada “were more likely to use electronic resources [than] physicians based in the United Kingdom” (Table S1, online only). In the reported frequencies of resources consulted, there are five discrepancies between the narrative text and data provided online, in Table 3: Internet 19 (18 in Table 3); textbooks 18 (17 in Table 3); articles 17 (15 in Table 3); professional websites 8 (6 in Table 3); and drug compendiums 7 (6 in Table 3). Further discrepancies are noted in the authors’ exclusion of any mention of OVID Medline in the Methods section, though search terms are noted in Figure 1 and in online data. Correction of these and other errors of language use would have improved the article.

Rather than providing new information, the article serves as a limited review over the past decade. Suggestions are made about the use of the review to enhance electronic health records, but readers should be aware of limitations to this and other research on the same topic. In particular, the materials reviewed are older (two thirds were published between 2003 and 2007), and they represent a widely disparate body of literature. As an example, three of the studies examined the use of particular products such as Dynamed, another examined information behaviours related to cancer treatment, and five discussed the use of infobuttons. Additionally, inclusion of the Cochrane Library, Web of Science, and OVID EMBASE databases in searching would have provided more comprehensive results, and may have affected findings.

Barriers to the performance of more rigorous cross-study comparisons due to methodological differences and the lack of shared definitions have been recognized elsewhere (e.g., Del Fiol, Workman & Gorman, 2014; Higgins et al., 2011). Physicians and nurses working in settings such as hospitals and medical librarians intending to structure services or collections on this research should consult more recent and narrowly-focused literature, and expand upon the authors’ conclusions with added local data.

## References

- Del Fiol, G., Workman, T. E., & Gorman, P. N. (2014). Clinical questions raised by clinicians at the point of care: A systematic review. *JAMA Internal Medicine*, 174(5), 710-18. <http://dx.doi.org/10.1001/jamainternmed.2014.368> .
- Glynn, L. (2006). A critical appraisal tool for library and information research. *Library Hi Tech* 24(3), 387-399. <http://dx.doi.org/http://dx.doi.org/10.1108/07378830610692154>
- Higgins, O., Sixsmith, J., Barry, M. M., & Domegan, C. (2011). A literature review on health information seeking behaviour on the web: A health consumer and health professional perspective. Stockholm: ECDC. <http://dx.doi.org/10.2900/5788>
- Perryman, C. (2009). Evaluation tool for bibliometric studies. Retrieved 13 Aug. 2014 from <http://cperryman.com/Critical%20appraisal%20tool%20-%20Bibliometric%20study.doc>