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The Information needs and information-seeking behavior of health care practitioners: A case study of health care practitioners of the Narh-Bita Hospital, Tema, Ghana.

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Abstract

Health information plays a major role in the delivery of care worldwide. It helps physicians make informed clinical decisions for the betterment of their patients. This study examined the information needs and information-seeking behavior of health care practitioners at the Narh-Bita hospital, Tema. The study employed the survey method and a questionnaire was used as an instrument for data collection. A sample of 69 health practitioners were randomly selected and given questionnaires to fill. Data obtained was analyzed using frequency accounts and simple percentages. The results showed that practitioners' information needs covered different clinical topic areas. The information-seeking behavior of practitioners was also found to vary towards a range of information resources with computer-based information resources being dominant. The study further revealed that the information resources consulted by practitioners had an impact on their clinical decision-making. It therefore recommended that measures should be put in place to ensure that there is reliable Internet connection for practitioners to access the open Internet and on-line databases to satisfy their numerous information needs.

Key words: Information needs, information-seeking behavior, information sources, health care practitioners, Ghana.

Introduction

Access to evidence-based health information plays a critical role in health care delivery. Health information helps practitioners make informed clinical decisions at the point of care. In the same vain, lack of access to evidence-based information could lead to medical errors such as wrong

diagnosis and wrong treatment thereby compromising the quality of care delivery (Clarke et al., 2013).

Technological advancements and exponential scholarly growth in the health field mean that information is produced at a very fast rate (Rutland & Smith, 2010). Consequently, accessing information on patient specific problem or condition is becoming challenging. At the same time, keeping abreast with new trends in the field which is fundamental for health practice is also becoming problematic due to the volumes of information one has to navigate in order to satisfy an information need (Alpi, 2005; McConaghy, 2006).

Research has affirmed that health practitioners are confronted with many clinical questions at regular basis during consultations. Collins et al. (2009) and Maviglia et al. (2006) assert that the frequency of information needs that arise during clinical consultations can range from one question for every 10 patients encounter to 4 questions per encounter. Out of these, only a negligible percentage of the questions are pursued and answered by physicians (Gravatt & Arroll, 2010; Gonzalez-Gonzalez et al. 2007). These questions may focus on treatment, diagnosis, and specific-patient advice. As and when these questions are pursued, practitioners found it difficult to get answers. In a test for the use of evidence-based databases in primary care, 40% of the complex questions and 30% of the general care management questions could not be answered (Koonce et al., 2004). Several barriers have been cited for practitioners unwillingness to search for clinical information to answer questions that arise at the point of consultations. Previous studies have identified lack of time as one of the major factors preventing physicians and other health practitioners from searching for information to answer clinical questions. Another, is the believe that an answer does not exist, or lack of confidence that an answer would not be found or that there is too much information or that the format of information is not sufficiently specific (Bennett et al., 2006; Boissin & Docsii, 2005; Allessandro et al., 2006; James et al., 2007; Oak & Gegg, 2008; Nail-Chiwetalu & Ratner, 2007; McConaghy, 2006).

The information-seeking behaviors of health practitioners largely depend on their information needs (Bryant, 2004). These needs have been found to be much varied and broad (Gonzalez-Gonzalez et al.,2007), as a result, practitioners' information-seeking habits turn to cover quite a range of information sources. It is believed that health practitioners have less time for self-study (Singh, 2012) and therefore require information in a certain form. Research has established that

practitioners information-seeking behaviors favor resources that share some common characteristics such as fast and easy to access, free, and certain depth of information in summary form (Oak & Gegg, 2008), reliable, trustworthy, and valid (Dovey et al., 2006; Comoun & Meijman, 2006; Dwairy et al. 2011), and easy to understand (Dwairy et al., 2011). Nail-Chiwetalu and Ratner (2007) state that virtually all surveys on the information needs and information-seeking behavior of health practitioners have found colleagues as the primary source of information for practicing clinicians, followed by textbooks, continuing education, workshops and the open Internet. However, other researchers hold a different opinion as they have found that the use of evidence-based resources (such as on-line databases and relevant medical websites) by clinicians are now gradually replacing those of the traditional sources (Gravatt & Arroll, 2010; Kosteniuk et al., 2013; Lee et al., 2016).

There is of a lot of literature on health practitioners' information needs and information-seeking behavior in developed countries. However, studies in developing countries such as Ghana on practitioners information-seeking behaviors is limited. Hence, little is known on the topic about health care practitioners at Narh-Bita Hospital. This study therefore aimed at finding the information needs and information-seeking behavior of health care practitioners at the Narh-Bita Hospital. In addition, the study sought to document the usage of the Narh-Bita College Library among the health practitioners and barriers, if any, to the use of the library.

Literature review on the Information needs and information-seeking behavior of health care practitioners

The information needs of health practitioners are generated at the point of care. It is affirmed that well-informed patients have an influence on the rates of practitioners' information needs during consultations (Bryant, 2004). The rates of practitioners' information needs generated by each consultation have been measured in many studies, yet appear to vary greatly. One study found that the rate of practitioners' information needs is one question for every 10 patients encounter to 4 questions per encounter (Collins et al., 2009; Maviglia et al. 2006). Another study by Covell et al. (1985) cited in Bradly et al. (2015) found that approximately 2 questions arose for every 3 patients seen. Gonzalez-Gonzalez et al. (2007) also reported that an average of 1.8 questions were generated for every 10 patients seen. The information needs of family physicians, general

practitioners, medical practitioners, primary care physicians, dental practitioners, physician assistants, nurse practitioners, and pediatricians have been the most studied (Bryant, 2004; Boissin & Docsii, 2005; Gonzalez-Gonzalez et al., 2007; Oak & Gegg, 2008; Gravatt & Arroll, 2010; Murugan & Allysorman, 2011; Singh, 2012; Kosteniuk et al., 2013; Botello-Harbaum et al., 2013; Bradly et al., 2015; Lee et al., 2016). These studies have found that patient-specific information, pharmacological information, specific gaps in knowledge on new diagnosis and therapies, to keep up to date with new information and modern clinical opinion, and to answer questions asked by patients are the major information needs of practitioners. Bates (2001) and Friedman et al. (2001) cited in Clarke et al. (2013) affirmed that patient-specific information was needed by primary care physicians and nurses during patient consultation, and accessing such information in a timely manner has a positive impact on clinical decision-making. In reviewing the information needs of physicians compared to nurses, Xu et al. (2005) cited in Clarke et al. (2013) noted that nurses were seeking information about protocols and procedures whereas physicians most common information need was related to diagnosis. Clarke et al. (2013) observed that diagnosis and treatment information needs were common information needs among physicians because it is one of their main job functions. A study by Randell et al. (2009) involving 76 primary care nurses found that prescription decisions were important information needs probably because of the essence of ensuring that patients do not suffer or experience adverse drug reactions during treatment. Furthermore, patient education about illness and diseases have been identified as a common information need among physicians and nurses because physicians and nurses are usually patient primary source of health information (Burkell et al., 2006; Matter et al. 2009; Taha et al., 2009). More so, Thompson (1997) cited in Bryant (2004) asserted that physicians seek information for two main reasons: (1) to obtain answers to patient-specific questions that cannot be answered by their personal knowledge alone and (2) to stay abreast of developments in clinical medicine. According to Bryant (2004) information is wanted to explain really important different risk factors by health practitioners. The information-seeking behaviors of health practitioners are well documented in the literature. Information-seeking behavior of health practitioners is defined as the way practitioners search for and utilize information to satisfy their information needs (Wilson, 2000 cited in Clarke et al., 2013). The information-seeking habit of health practitioners are influenced by certain factors. Oak and Gegg (2008) observed that not all general practitioners follow the same trend in their information-

seeking habits and may be influenced by some specific environmental factors. According to Andrew et al. (2005) geographical settings might be considered as a factor that influenced the information-seeking behaviors of primary care practitioners. Variables such as credibility, relevance, access, speed, free, and ease have also been identified as factors that influenced clinicians' decision for choosing a particular information source (Bennett et al., 2004; Oak & Gegg, 2008). Furthermore, other studies have found that personal and professional characteristics, patient characteristics, and perceived knowledge status were factors associated with information-seeking behaviors of practitioners (Olatopkun & Ajagbe, 2010; Lee et al., 2016). The information-seeking behaviors of practitioners seem to vary towards numerous information sources. Literature has shown that the resources practitioners used are diverse. Earlier studies on health practitioners information-seeking behavior seems to point much towards the use of sources such consulting colleagues and the use of print resources. For example, in 1999, Chimosky and Norris (1999) cited in Bradley et al. (2015) reported on a survey of rural generalist physicians in Washington State. Based on 258 responses, majority (95% or more) agreed that they consulted a reference book and a colleague whenever they needed an answer to a clinical problem. Sixteen per cent agreed with the statement "I don't have time to use a computer". Many studies in European and North American dating from the seventies onwards, have also reported that the primary sources of information for general practitioners and family physicians are colleagues and print sources (Verhoever, Boerman, & Meyboom-DeJong, 1995; Haug, 1997; Ely et al., 1999; Coumou & Meijman, 2006; Andrews et al., 2005). Indeed, several other studies from 2000 onwards continue to report similar findings (Bryant, 2004; Oak & Gegg, 2008; Alessandro et al., 2006; James et al., 2007; Nail-Chiwetalu & Ratner, 2007). Nail-Chiwetalu and Ratner (2007) state that virtually all surveys on the information needs and information-seeking behavior of health practitioners have found colleagues as the primary source of information for practicing clinicians, followed by textbooks, continuing education, workshops and the open Internet. Furthermore, other scholars have also pointed out that physicians and other practitioners have placed a much higher value on consulting colleagues for information about clinical decision-making than scholarly sources of information (Dawes & Sampson, 2003; Dee & Stanley, 2003; Estabrooks et al., 2003; Cogdill, 2003; Jette et al., 2003; Schaaffman et al., 2004; Coumou & Meijman, 2006).

However, findings of very recent studies on practitioners information-seeking behavior point

towards a slight shift from print sources and colleagues to the use of evidence-based and scholarly source of information (Gravatt & Arroll, 2010; Kosteniuk et al., 2013; Lee et al. 2016). These studies have found that practitioners now turn more to the use of Internet and on-line databases. The authors observed that this possible change of textbooks and colleague to a more dependence on web-based resources has the added advantage of providing clinicians with up-to-date information that may not be possible with paper-based resources and consultation with colleagues. In fact, given the widespread and availability of web-based resources nowadays, such as, on-line journals, databases such as MEDLINE, and evidence-based medicine resources such as UP TO DATE, health practitioners use of these resources will only continue to increase (Davies, 2007; Gravatt & Arroll, 2010; Davies, 2011; Flynn & McGuinness, 2011).

Methodology

Study Setting

THE NARH-BITA HOSPITAL

The Narh-Bita hospital is one of the renowned private hospitals in the Tema metropolis. It is located at the heart of the Tema township, which is community 4. It provides both general and specialist care services to clients as well as organizing outreach and health education programs to surrounding communities and beyond. The hospital serves as a training institution for not only Narh-Bita College students but students from other private institutions in Ghana and the world over.

All consulting rooms of the hospital are fully computerized with Internet access. There is also continuous professional development being organized for health care practitioners on regular basis to update their professional knowledge and to keep up with changing trends in the field of medicine. Besides, the hospital is a sister institution of the Narh-Bita College located jointly together. The Narh-Bita College Library provides health information to support teaching, learning, research and clinical practice. The library has access to HINARI (Health Information Network Access to Research Initiative) since 2008, which currently provides over 23,000 biomedical full-text journals on-line free of charge. The aim of HINARI is to provide public health workers, health practitioners, researchers, and policy makers with access to high quality, relevant, and timely health information via the Internet. The library is opened to all the health care practitioners of the hospital hence these resources are available and accessible to all the

health practitioners of the Narh-Bita Hospital. Yet it is unknown whether the practitioners use the numerous resources provided by the library to supplement their knowledge for patient care.

Study Design

The study adopted the survey method and a questionnaire was therefore used as an instrument for data collection. A sample of 69 representing 50 percent of the total of 138 health practitioners made up of Medical Doctors, Specialists, Physician Assistants, and Nurses from the Narh-Bita Hospital was used for the study.

Respondents were selected randomly from an ordered list from the hospital administration on the basis of their practice type as mentioned above. Before the actual administration of the questionnaire, the questionnaire was pre-tested among ten health care practitioners who were again randomly selected and these practitioners were excluded from filling the actual questionnaire. The pre-testing was done to improve the flow and readability of the questions. A Research Assistant was trained on how to administer the questionnaire to all selected respondents since this Assistant was familiar with the working schedules of almost all health practitioners in the hospital. The Research Assistant personally delivered the questionnaires to respondents during their working hours and kept on reminding them on weekly basis. Participation was voluntary and no financial compensation was given to respondents. It took five weeks for all filled questionnaires to be retrieved. In all, Sixty nine responses were received, representing 100 percent of the total 69 questionnaires distributed. The questionnaire measured the information needs and information-seeking behavior of health practitioners of the hospital. The Assistant was then given a token for the questionnaire administration.

Results and Analysis

Of the 69 responses received, there were 35 males representing 51% and 34 females representing 49%. This implies that gender was fairly represented. Majority (81%) of them were aged below 35years, 17.4% were aged between 35 and 44 years, and 1.5% fell between 45 and 54 years. No one was aged above 55 years. Implying that most of the respondents were very young. Again, majority of the respondents (75.4%) had been in practice below 6 years, followed by 23.2% of them who had been practicing between 6 and 10 years. 1.4% (1) of the respondents had been practicing between 11 and 15 years while none had been in practice for 16 years and above. In addition, the study results showed that majority of the respondents (72.5%) were Nurses,

followed by 14.5% (10) who were General Practitioners, whilst 7.2% (5) were specialists, and 5.8% (4) were Physician Assistants. This result showed that nurse practitioners were overrepresented in the study.

Information needs of practitioners

The information needs of health practitioners cover a broad spectrum of clinical topics. Therefore respondents were asked what prompts them to seek for medical information. They were presented with a list of information needs informed by previous studies that identified the information needs of practitioners and they were required to choose as many as applicable. Their responses have been presented in table 1 below.

Information needs	No.	%
A specific patient problem	59	85.5
An answer to a clinical question posed by a colleague or a patient	50	72.5
A pharmacological information	52	75.4
Patient education about illness and diseases	54	78.2
The desire for latest research	45	65.2
New information in a disease area	56	81.2
Specific gaps in knowledge on new diagnosis and therapies	37	53.6
Questions regarding a nursing procedure and protocol	41	59.4
To prepare for in-service presentation	22	31.9
To write a journal article	24	34.8
For curiosity	48	66.7

Table 1: Information needs of health practitioners

Based on the responses received (Table 1), needing information on a specific patient problem was the major information need for which majority (85.5%) of the practitioners often sought for medical information, followed by new information in a disease area (81.2%), patient education about illnesses and diseases (78.2%), and fourth place: a need for pharmacological information was cited as another factor that prompts practitioners' information-seeking, whilst needing information to answer a question posed by a colleague or a patient recorded 72.5%, again followed by curiosity (66.7%), the desire for latest research in a specific area (65.2%), then needing information on questions regarding nursing procedures and protocols (59.4%), and specific gaps in knowledge on new diagnosis and therapies (53.6%). Lesser information needs

were needing information to write a journal article (34.8%) and to prepare for an in-service presentation (31.9%). The results showed that practitioners' information needs are spread across diverse clinical topic areas.

Practitioners information-seeking frequency

The level or the frequency of practitioners' information-seeking determines the urgency of their information needs and uptake of medical information. Practitioners were therefore asked “How often do you search for medical information for patient care?”. These were their responses:

Information searching frequency	No.	%
Daily	12	17.4
Several times per week	23	33.3
Weekly	5	7.2
Less frequently	19	27.6
No response	8	11.6
Total	69	100

Table 2: Frequency of practitioners information searching

Table 2 shows that a little over one third (33.3%) of the respondents indicated that they sought information for patient care several times per a week, followed by less frequently (27.6%), whilst 17.4% sought information on daily basis, and 7.2% of them sought information weekly. 8 of the respondents did not response to this question, taken to mean that they did not search for information at all. The high information searching rate means that practitioners' information needs must be properly be understood and appropriate measures taken to ensure that the required information is made available and accessible to them.

In addition, respondents were asked what time interval was convenient for their information searching, given that practitioners are always busy attending and seeing patients; the results revealed that nearly a half (45%) of the respondents carried out their information searches after work, followed by a similar percentage (45%) who did their searching during break time, whilst a negligible (10%) of them searched for information at the point of care.

Also, in reporting whether practitioners were always successful in their information searching endeavors, the results showed that great majority of the respondents (85.5%) were successful in their information searching “most of the time”, whilst 13% were successful “all the time”, and only 1.5% were not successful at all. It therefore appears that respondents have some appreciable level of information-searching skills. Furthermore, the confidence of practitioners to finding the

needed information was also measured. When practitioners are confident of finding the information they need, there is a high probability that they would always conduct searches to find information to resolve clinical uncertainties. One study reported that lack of confidence that a relevant answer would be not found was one of the barriers to practitioners information-seeking (Lee et al., 2016). The results revealed that majority of the respondents (84.1%) were always confident of finding the needed information, while only 11 of them were not. Again, literature has shown that there are several barriers that affect health practitioners search for information. Therefore respondents were asked “Are there factors militating against your search for clinical information”, and the results showed that majority of the respondents (76.8%) responded “No”, whilst a little below one third (23.2%) responded “Yes”. The 23.2% respondents who agreed that there were barriers to their search for clinical information stated some of the barriers as presented in the Table below:

Barriers	No.	%
Time	1	6.3
capital	3	18.8
forgetfulness	1	6.3
Undesired information	2	12.5
Poor Internet connection	2	12.5

Table 3: Barriers to information-searching

Table 3 shows that the most frequently reported barriers to practitioners information-seeking were capital/cost (18.8%), followed by undesired information (12.5), poor Internet connection (12.5%), time (6.3%) , and forgetfulness (6.3%). However, it must be noted that time was not a major barrier to practitioners information-seeking as reported in other studies (Bennett et al., 2006; James et al. 2007; Alessandro et al., 2006; Nail-Chiwetalu & Ratner, 2007).

Information-seeking behavior of practitioners

This section measured the information-seeking behavior of practitioners by asking the following specific questions:

The first question examined the format of information sources that respondents were most likely to seek information from, hence they were asked “Where do you mostly turn to seek information to answer your professional information needs”, and the options were print and electronic source. The results showed that majority of the respondents (72.5%) preferred electronic information

sources to print information sources (27.5%).

The Frequency of Information Sources use

Health practitioners consult a large range of information sources, therefore, a list of different information sources identified in previous studies and presented to the respondents to indicate the sources they frequently used, and their responses have been presented as follows:

Information Sources/Frequency of use	Daily No.(%)	Weekly No.(%)	Less Frequently No.(%)	Never No.(%)
Medical textbooks (handbooks inclusive)	6(8.7)	4(5.8)	51(73.9)	8(11.6)
Medical journals	3(4.3)	4(5.8)	60(87)	2(2.9)
Guidelines	24(34.8)	8(11.6)	30(43.5)	7(10.1)
Drug reference manuals	39(56.5)	7(10.1)	18(26.1)	5(7.2)
Electronic textbooks	45(65.2)	3(4.3)	20(29)	1(1.4)
Electronic databases (e.g. MEDLINE etc)	48(69.6)	6(8.7)	12(17.4)	3(4.3)
Contacts with colleagues	15(21.7)	17(24.6)	32(46.4)	5(7.2)
Continuing Professional Development	25(36.2)	3(4.3)	38(55.1)	3(4.3)
The Open Internet	55(79.7)	2(2.9)	8(11.6)	4(5.8)

Table 4: Information Sources or Resources

Table 4 shows that the most cited used information sources were the Open Internet (79.7%), electronic databases (69.6%), electronic textbooks (65.2%), and drug reference manuals (56.5%). This implies that practitioners consulted computer-based resources more frequently as compared to paper-based resources.

When further queried about their favorite sources of information for clinical information needs: in order of importance, they listed the Internet, electronic databases, guidelines, drug reference manuals, and medical journals. This result further implied the dominance of electronic resources in contrast to paper-based resources. In addition, respondents were asked whether the resources they used have had an impact on their clinical decision-making. Every single respondent answered “Yes” to the question. This meant that the decisions the clinicians made during patient care were informed by the materials they consulted. Therefore stringent measures should be put in place to provide relevant sources of information for these clinicians in order to ensure and maintain quality patient care.

Further, the Narh-Bita College Library provides mainly health information and is opened to all health practitioners of the Narh-Bita Hospital. Hence, one of the objectives of the study was to

investigate the use of the Library among the health practitioners. The respondents were therefore asked “Have you ever used the Narh-Bita College Library?”. The results revealed that most of the respondents (78.3%) indicated that they had ever used the library. Only a few (21.7%) indicated that they had not used the library. A follow up question to establish possible factors that might inhibit practitioners use of the library resulted in no answer from all the respondents who were not using or who had never used the library. This means that there were no barriers to the use of the library and respondents who had never used the library did so at their will without any reason.

Discussion

Health information plays a critical role in health delivery. It is apparent that practitioners information needs are in diverse forms. For instance, nurse practitioners need much information on drug prescriptions because they are concerned with drug adverse reactions during the administration of drugs to patients likewise general practitioners might concerned themselves with information on diagnosis and patients conditions management. This study revealed that the most commonly mentioned information needs were needing information on a specific patient problem, needing information on a new disease area, information on patient education about illness and diseases, and pharmacological information. This finding supports the findings of Nail-Chiwetalu and Ratner (2007) who reported that the most frequently cited purposes for which Speech-Language Pathologists practitioners sought information were needing to consult for patient or client care (30%), followed by needing to answer a question posed by a patient, client or family member (22%), needing to answer a question posed by a colleague (18%), and needing information to prepare for an in-service presentation. Similarly, Bennett et al. (2006) reported that a specific patient problem most often prompted a search for medical information on the Internet (33.7%), followed by a desire for the latest research in a specific topic (27%), and new information in a disease area (20.4%). The study again showed that majority of the practitioners searched information for patient care several times per a week and daily. This finding concurs with that of James et al. (2007) where 58% of respondents stated that they sought information to support patient care several times per a week. This study also revealed that most practitioners sought information after work and during break time while searching for information at the point of care recorded a negligible percentage. This might have been due to of

lack of time during patient consultation. One study found that the average time for consultation was 8 minutes (Gonzalez-Gonzalez et al., 2007), which is woefully inadequate to seek for information while patients waited. This finding nonetheless supports the findings of Bennett et al. (2006) that health practitioners' information searching mostly occurred at home (after work) (38.2%) or during breaks in the day (35.7). These findings are however at variance with the findings of James et al. (2007) that a whopping 66% of respondents sought information while the patient waited. The study further revealed that most respondents found the information they searched for all the time and most of the time, probable because they have better information searching skills and knowledgeable in specific information sources to turn to whenever the need for information arises. This finding is similar to that of Bennett et al. (2006) where most respondents (68.7%) stated that they found the information they were looking for most of the time and more than 51% found it all the time. Bennett et al. (2006) further found that majority of the physicians (41%) were confident or very confident (20.7%) that they would find the information they sought. This sharply agrees with the findings of this current study that most of the practitioners (84.1%) surveyed were confident of finding the information they sought. In addition, previous studies have found time as a major and important barrier to practitioners information-seeking (Bryant, 2004; Boissin & Docsii, 2005;). These findings are completely at variance with the current study findings where time was not a major barrier to the information-seeking of health practitioners. This could be attributable to practitioners in this study over reliance on electronic sources which can be potentially time efficient. This indication is supported by Bennett et al. (2006) that accessibility of electronic information in the clinical setting has the tendency to reduce barriers to pursuing answers to questions posed in clinical practice.

Furthermore, results of the present study point to electronic information sources being preferred to print information sources by the respondents, perhaps in part because of the availability and accessibility of electronic resources in nowadays and addition to the fact physicians are increasingly skillful in using the Internet to find clinical information. This finding contradicts that of Alessandro et al. (2006) and Bryant (2004) where paper-based sources were the most commonly used for answering questions and computer-based resources accounted for a smaller percentage. This study revealed that the most frequently used information resources were the Open Internet, electronic databases, electronic textbooks, and drug reference manuals. In contrast

with the findings of previous studies where contacts with colleague and medical textbooks dominated (Bennett et al., 2006; Alessandro et al., 2006; Murugan & Allysorman, 2011; Botello-Harbaum et al., 2013). This finding however is similar to the works of (Gravatt & Arroll, 2011; Kosteniuk et al., 2013; Lee et al., 2016). This study participants identified the Internet, electronic databases, guidelines, drug reference manuals, and medical journals as their favorite information sources. This finding is similar to the work of Bradley et al. (2015). The study further revealed that majority of the respondents agreed that the resources or sources they used had an impact on their clinical decision-making. This finding is in agreement with the findings of Botello-Harbaum et al. (2013) where it was found that most information sources used had an influence on practitioners clinical decision-making. Though the authors admitted that this influence was self-reported and that verification and documentation of the actual influence were not performed. Similarly, Apiriri and Bondy (2006) found that respondents indicated that the sources they used were influential on their decisions making in health care. In addition, the current study found that a significant higher percentage of the practitioners had ever used the Narh-Bita College Library, probable because of the little awareness the library creates among newly employed health personnel and in addition, majority, especially, the nurses and physician assistants have had their training at the Narh-Bita College. This finding disagrees with the findings of Singh (2012) where more than half of medical practitioners (52.20%) stated that they had never visited the library.

Limitations of the Study and Future Directions

This study is limited to its selection of health practitioners from a single health facility and the reliance on reported data rather than observed behavior. Future studies could look into the specific Internet websites and specific databases used by the clinicians to answer clinical problems.

Conclusion and Recommendations

The information needs and information-seeking behavior of health practitioners are important area of research. It is apparent that the knowledge of health practitioners gained after graduation from school might not be enough for practice, they need additional resources to update themselves and to answer certain clinical problems they may be routinely be confronted with. This study revealed that practitioners information needs are broader and diverse thereby

compelling them to rely on several information sources in order to satisfy those needs. The study again found that computer-based information resources were the most frequently used resources. The resources practitioners consulted were also found to have an impact on their clinical decision-making. Based on the findings, the following recommendations were made:

- Since practitioners information-seeking behavior is tailored towards computer-based resources, measures must be taken to ensure there is constant Internet connectivity in and around the vicinity of the hospital. This may take the form of installing broad band wireless infrastructure to complement the existing one.
- Specific information resources assessment should be carried out among practitioners so as to identify and provide those resources in a timely manner since practitioners agreed that the resources they used impact their clinical decision-making.
- More training sessions on searching computer-based information resources should be organized for practitioners to increase their information searching skills.
- The library should also create more awareness on the availability of health information in the library, especially the use of HINARI. This may take the form of understanding the relevant databases or journals required and delivering them through practitioners e-mail addresses.

References

Alessandro, D. M. D., Kreisteri, C. D., & Peterson, M. W. (2006). An evaluation of information

- seeking behaviors of general pediatricians. *Pediatrics*, 113(1), 64-69. DOI: 101542/peds.113.1.64. Access at www.pediatrics.org.
- Alpi, K. (2005). Expert searching in public health. *Journal of the Medical Library Assoc.*, 93, 97-103.
- Andrews, J. E., Pearce, K. A., Ireson, C., & Love, M. M. (2005). Information-see behaviors of practitioners in a primary care Practice-based Research Network (PBRN). *Journal of the Medical Library Association*, 93, 206-212.
- Apiriri, L., & Bondy, S. J. (2006). Health practitioners and health planners' information needs and seeking behavior for decision-making in Uganda. *International Journal of Medical Informatics*, 75(10/11), 714-721. Access at <https://doi.org/10.1016/j.ijmedinf.2006.10.001>
- Bennett, N. L., Casebeer, L. L., Zheng, S., & Kristofco, R. (2006). Information-seeking behaviors and reflexive practice. *The journal of Continuing Education in the Health Professions*, 46(2), 120-127.
- Bennett, N. L., Casebeer, L., Kristofco, R., & Strasser, S. (2004). Physicians' Internet information seeking behaviors. *Journal of Continuing Education in the Health Professions*, 24, 31-38.
- Boissin, F. E., & Docsii, U. (2005). Information-seeking behavior and use of the Internet by French general practitioners. A qualitative study. *Health Information and Libraries Journal*, 22, 173-181.
- Botello-Harbaum, M. T., Demka, C. A., Curro, F. A., Rindal, B., Collie, D., Gilbert, G. H., & . . . (2013). Information-seeking behaviors of dental practitioners in three practice-based Research Networks. *Journal of Dental Education*, 77(2), 152-160.
- Bradly, P. V., Getrich, C. M., & Hanningan, G. G. (2015). New Mexico practitioners access to and satisfaction with online clinical information resources: An interview study using qualitative data analysis software. *Journal of Medical Library Association*, 103(1) 31-35.
- Bryant, S. L. (2004). Information needs and information-seeking behavior of family doctors. *Health Information and Libraries Journal*, 21, 84-93.
- Burkell, J. A., Wolte, D. L., Potter, P. J., & Jutai, J. W. (2006). Information needs and information sources of individuals living with spinal cord injury. *Health Informatics and Libraries Journal*, 23, 257-265.
- Clarke, M. A., Belden, J. L., Koopman, R. J., Steege, L. M., & Moore, J. L. (2013). Information

- needs and information-seeking behavior analysis of primary care physicians and nurses: A literature review. *Health Information and Libraries Journal*, 30, 178-190.
- Cogdill, K. W. (2003). Information needs and information-seeking in primary care: A study of nurse practitioners. *Journal of Medical Library Association*, 91(2), 203-215.
- Collins, S. A., Currie, L. M., Bakken, S., & Cimino, J. J. (2009). Information needs, information manager use, and satisfaction by clinician type: A case study. *Journal of the American Medical Informatics Association*, 16, 140-142.
- Coumou, H. C., & Meijman, F. J. (2006). How do primary care physicians seek answers to clinical questions? *Journal of the Medical Library Association*, 94, 55-60.
- Davies, K. (2007). The information-seeking behavior of doctors: A review of the evidence. *Health Inform Libr J.*, 24, 78-94.
- Davies, S. K. (2011). Physicians and their use of information: A survey comparison between the United States, Canada, and the United Kingdom. *Journal of Medical Libr Assoc*, 99(1), 88-91. Doi: <http://dx.doi.org/103163/1536-5050199.1.015>.
- Dawes, M., & Sampson, U. (2003). Knowledge management in clinical practice: A systematic review of information seeking behavior in physicians. *Int J Med Inform*, 71, 9-15.
- Dee, C., & Stanley, E. E. (2003). Information-seeking behavior of nursing students and clinical nurses: Implications for health science Librarians. *J Med Libr Assoc*, 93(2), 213-222.
- Dovey, S., Fraser, T., Tilyard, M., Ross, S., Baldwin, K., & Kane, D. (2011). 'Really simple, summary, bang! That's what I need. *New Zealand Family Physician*, 33(1), 18-24.
- Dwairy, M., Dowell, A., & Stahl, J. (2011). The application of foraging theory to the information-seeking behavior of general practitioners. *BMC Family practice*, 12, 90.
- Ely, J. W., Osheroff, J. A., Ebell, M. H., Bergus, G. R., Levy, B. T., Chambliss, M. L., & Evans, E. R. (1999). Analysis of questions asked by family doctors regarding patient care. *British Medical Journal*, 319, 358-361.
- Estabrooks, C. A., O'Leary, K. A., Ricker, K. L., & Humphrey, C. K. (2003). The Internet and access to evidence: How are nurses positioned? *Adv Nurs*, 42(1), 73-81.
- Flynn, M., & McGuinness, C. (2011). Hospital clinicians information behavior and attitudes towards the clinical informationist: An Irish survey. *Health Inform Libr J*, 28(1), 23-32.
- Gonzalez-Gonzalez, A. I., Dawes, M., Sanchez-Mateos, J., Riesgo-Fuertes, R., Escortell-Mayor,

- E., Sanz-Cuesta, T., & Hernandez-Fernandez, T. (2007). Information needs and information-seeking behaviors of primary care physicians. *Annals of family medicine*, 5(4), 345-352.
- Gravatt, B. H., & Arroll, B. (2010). What resources do Ackland general practitioners use for answering immediate clinical questions and for lifelong learning? *Journal of Primary Health Care*, 2(2), 100-104.
- Haug, J. D. (1997). Physicians preferences for information sources. *Bulletin of Medical Library Association*, 85, 223-232.
- James, A. E., Pearce, K. A., Ireson, C., & Love, M. M. (2007). Information seeking behaviors of practitioners in primary care Practice-based Research Network. *Journal of the Medical Library Association*, 93(2), 206-212.
- Jette, D. U., Bacon, K., Batty, C., Carlson, M., Ferland, A., Hemingway, R. D., Hill, J. C., Ogilvie, L., & Volk, D. (2003). Evidence-based practice: Beliefs, attitudes, knowledge, and behaviors of physical therapists. *Physical therapy*, 83(9), 781-805.
- Koonce, T. Y., Giuse, N. B., & Todd, P. (2004). Evidence-based databases versus primary medical literature: An in-house investigation on their optimal use. *J Med Libr Assoc.* 92(4), 407-411.
- Kosteniuk, J. G., Morgan, D. G., & D'Arcy, C. K. (2013). Use and perceptions of information among family physicians: Sources considered accessible, relevant, and reliable. *Medical Journal Libr Assoc.*, 101(1), 32-37.
- Lee, J. V., Pedersen, L. B., Riisgaard, H., Lykkegaard, J., Nexoe, J., Lemmergaard, J., & Sondergaard, J. (2016). Variation in general practitioners' information-seeking behavior: A cross-sectional study on the influence of gender, age, and practice form. *Scandinavian Journal of Primary Health Care*, 34(4), 327-335.
- Matter, B., Feinberg, M., Schomer, K., Harniss, M., Brown, P., & Johnson, K. (2009). Information needs of people with spinal cord injuries. *Journal of Spinal Cord Medicine*, 32, 545-554.
- Maviglia, S. M., Yoon, C. S., Bates, D. W., & Kuperman, G. (2006). Knowledge lack: Impact of context-sensitive information revival on clinicians information needs. *Journal of the American Medical Informatics Association*, 13, 67-73.
- McConaghy, J. R. (2006). Evolving medical knowledge: Moving toward efficiently answering

- questions and keeping current. *Prim Care*, 33(4), 831-837.
- Murugan, B. O. S., & Allysorman, S. (2011). Information needs and information-seeking behavior of Allopathic medical practitioners in Trappur District in Tamillnadu, India. *Library Philosophy and Practice, (e-journal)*. 594.
- Nail-Chiwetalu, B., & Ratner, N. B. (2007). An assessment of the information-seeking abilities and needs of Practicing Speech-Language Pathologists. *Journal of Medical Library Association*, 95(2), 182-188. DOI: 10.3163/1536.5050.95.2.182
- Oak, K., & Gegg, R. (2008). Increasing the rural general practitioners use of library and information services through publicity: A randomized controlled trial in Connwalk, UK. *Health Information and Libraries Journal*, 25, 208-217.
- Olatopkun, W., & Ajagbe, E. (2010). Analyzing traditional medical practitioners' information-seeking behavior using Taylor's information-use Environment Model. *Journal of Librarianship and Information Science*, 42(2), 122-135.
- Randell, R., Mitchell, N., Thompson, C., McCaughan, D., & Dowding, D. (2009). From pull to push: Understanding nurses' information needs. *Health Informatics Journal*, 15, 75-85.
- Ruttland, J., & Smith, A. M. (2010). Information needs of the frontline public health workforce. *Public Health*, 124, 659-663.
- Schaaffman, F., Hulshof, C., Van-Dijk, F., & Verbeek, J. (2004). Information demands of occupational health physicians and their attitude towards evidence-based medicine. *Scan J Work Environ Health*, 30(4), 327-330.
- Singh, R. K. (2012). Information seeking behavior of medical practitioners: A case study of medical practitioners of Varanasi District, India. *International Journal of Information Research*, 2(1), 28-44.
- Taha, J., Sharit, J., & Czaja, S. (2009). Use of and satisfaction with sources of health information among older Internet users and nonusers. *Gerontologist*, 49, 663-673.
- Verhoeven, A. A., Boerman, E. J., & Meyboom-DeJong, B. (1995). Use of information sources by family physicians. *Bulletin of the Medical Library Association*, 83, 85-90.

