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An Information Needs Assessment of School Nurses in a Metropolitan County

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Abstract

School nurses are an integral though often underserved population within the health care and education professions. To develop an effective outreach program for this group, an academic health sciences library conducted an information needs assessment of public school nurses in Tulsa County, Oklahoma. An online survey collected perceptions regarding information needs and behaviors, and a focus group session further explored the survey results. The assessment revealed that school nurses frequently require specific types of information to perform their responsibilities but also face challenges accessing and integrating research into their daily practice. This article presents the implications and results of this assessment.

Keywords

Information behaviors; information needs; information outreach; school nurses

Introduction

School nurses are integral in facilitating student health and learning. They are not only strategically placed to address the immediate health needs of their students but also to affect the health behaviors and health literacy of their communities.¹ Unfortunately, as a profession, school nurses are often an underserved population. To address this problem, the Schusterman Library at the University of Oklahoma-Tulsa Schusterman Center (OU-Tulsa) conducted an information needs assessment of school nurses in Tulsa County in order to develop an information outreach initiative targeting this population group. The assessment included an online survey and focus group session. As a result of the assessment, the Schusterman Library gained an understanding of the information needs and behaviors of school nurses in Tulsa County to direct their outreach efforts.

To be effective, information outreach should be guided by the careful evaluation of the population intended to be served and an understanding of the group's current use of health information, their abilities using information sources, and their levels of access to these sources.² A search of the professional library literature revealed that school nurses were underrepresented in this research area. Thus, in addition to guiding the Schusterman Library's development of health information outreach initiatives for school nurses in Tulsa

County, the assessment results fill a gap in knowledge regarding the information needs and behaviors of school nurses.

Literature Review

Many different levels of service are encompassed within the role of the school nurse including facilitating normal child development, promoting health and safety, providing quality health care, using clinical judgment in case management, and collaborating within school teams.³ The National Association of School Nurses (NASN) purports that school nurses directly impact a student's academic performance and ability to learn.⁴ Examples of studies supporting this conclusion have demonstrated that a school nurse can influence a student's school performance, absenteeism, and overall quality of life.⁵⁻⁷

A variety of challenges face this population of health professionals. School nurses are required to practice independently in a community setting and meet the complex health needs inherent within diverse school populations. As school nurses are often responsible for more than one school location, they must be prepared to travel between buildings. Even when managing only one school, the school nurse operates in a variety of settings including the health office, classroom, auditorium, and student home and is often required to report to administrators and school boards who do not fully realize the complexities of the nursing and health sciences fields.⁸

High student caseloads are also a challenge for the school nurse. The official NASN position recommends a student to nurse ratio of 750:1.⁴ In reality, the average reported in a NASN 2007 national survey is a student caseload of 1151.⁹ On account of this high number of students, the school nurse experiences limited time and resources to manage her population, especially the increasing number of students exhibiting exceptional health needs.¹⁰ According to the 2009 – 2010 National Survey of Children with Special Health Care Needs (NS-CSHCN), 11.2 million children in the United States present with special health needs, including allergies, ADD/ADHD, asthma, developmental delays, and diabetes.¹¹

While school nurses have traditionally placed value upon knowledge acquired through the experiences of themselves and of their colleagues, a scan of the school nursing literature reveals a growing interest in evidence-based practice within the profession.¹² Implementing this research into the school nurse's practice likewise proves difficult. A survey of school nurses in Iowa demonstrates that though aware of the concept of evidence-based practice and its value within the profession, respondents were not equally confident in their ability to explain the tenants of or gain access to evidence-based research.¹³

The recognition of this need to develop skills in research and searching affords the medical library profession with information outreach opportunities to address these specific challenges and situations of school nurses. With this goal in mind, the OU-Tulsa Schusterman Library conducted an information needs assessment of school nurses within its service vicinity to appraise this population's information needs and behaviors in order to guide such developments.

Methods

The sample population for this assessment was limited to school nurses employed in public school districts within Tulsa County. Tulsa County has a population of 629,598 and contains sixteen public school districts in which approximately 116,687 students are enrolled. Of these districts, fourteen employ at least one school nurse. At the time of the assessment in 2012, 87 school nurses were employed in Tulsa County public schools. The Schusterman Library applied and received funding to conduct the assessment through a Health Information Needs Assessment Award from the National Network of Libraries of Medicine, South Central Region (NN/LM SCR).

A mixed-methods approach was chosen for the study design—an online survey and a focus group session. The survey was designed to collect demographic information of school nurses in Tulsa County and to answer questions regarding the type of information frequently sought, the information sources frequently consulted, and perceptions of searching abilities. The focus group session was scheduled after the conclusion of the survey to solicit feedback from school nurses regarding the results.

Survey Design

The online survey was divided into four sections and was designed to collect data regarding information use and behaviors of Tulsa County school nurses, perceptions regarding their searching ability, school health initiatives, and demographics, such as years of experience, school environment, and student caseload (see Appendix A). The final survey question asked respondents about their certification/registration in order to ensure that responses included in the analysis were registered by the Oklahoma State Board of Nursing and certified by the Oklahoma State Board of Education, a state requirement of school nurses.¹⁴ Faculty members of the OU-Tulsa Schusterman Library and the University of Oklahoma Health Science Center College of Nursing reviewed survey questions.

Survey Distribution

The survey was open for a six-week period in the fall of 2012. The principle investigator contacted the coordinating nurse or supervisor of health services in each of the Tulsa County public school districts to notify them of the project and acquire a complete list of mailing and e-mail addresses for every employed school nurse. One week prior to commencing the survey, a letter was mailed to the entire sample population describing the purpose of the survey, outlining the timeline of the project, and providing a URL link to the survey. To encourage participation, the letter also included instructions for entering a raffle prize drawing to win a NOOK tablet device. Once the survey opened, a similar e-mail was sent to the school nurses. At both three and five weeks, follow-up e-mails were distributed thanking those who had completed the survey and reminding the non-responders of the chance to still participate.

Focus Group Design

After closing the online survey, a one-hour focus group session was scheduled for March 2013. The session provided an opportunity for the principle investigator to meet with a small

group of school nurses, collectively explore the results of the survey, and gain personal perspectives regarding information use and behavior. Focus group members were solicited during the survey and offered a \$10 gift card as incentive. At the end of the survey, respondents interested in participating were directed to a separate survey to provide their contact information. The principle investigator later contacted these school nurses, and those respondents who agreed to participate were sent a letter containing information about the session and a consent form to participate. The principle investigator began the session with a brief demonstration of online health information resources followed by a structured discussion regarding survey results (see Appendix B).

Ethical Considerations

The principle investigator received approval by the University of Oklahoma Health Science Center Institutional Review Board to conduct the assessment under contract IRB No: 16542. No formal consent was required for completing the anonymous survey as consent was implied. Consent forms were received for all focus group participants.

Results

Of the 87 school nurses employed in Tulsa County public school districts at the time of the assessment, the survey received a total of 63 electronic submissions. Upon filtering the responses to include only those licensed as a registered nurse by the Oklahoma State Board of Nurse Registration and certified by the State Board of Education, the principle investigator had a dataset of 58 valid survey responses for a response rate of 66.7%. Twenty-nine of the 58 survey respondents indicated interest in the focus group session; however, only five were able to participate on the scheduled date.

Demographics

Demographic characteristics of public school nurses in Tulsa County based upon survey responses are displayed in Table 1. Regarding years of experience as a registered nurse, the overwhelming majority of survey respondents indicated having ten or more years of experience (n = 47, 81%); however, levels of experience as a school nurse were more diverse. Although almost half of the respondents indicated ten or more years of experience as a school nurse (n = 31, 53%), roughly a quarter indicated having zero to two years (n = 14, 24%), and five to nine years (n = 12, 21%) within the school nursing field.

In examining the responsibilities of Tulsa County public school nurses, 67% oversee at least one elementary school (n = 39), 31% oversee at least one middle school (n = 18), and 31% oversee at least one high school (n = 18). The average student caseload in Tulsa County is 1,308, which is close to the national average but actually lower than the overall State of Oklahoma average of 2,372 students.¹⁵ Still, 73.2% of survey respondents reported a student-to-nurse ratio higher than that recommended by NASN.

Finally, 76% of Tulsa County public school nurses are not members of a professional association (n = 44); 22% are members of the National Association of School Nurses (n = 13), and 24% are members of the School Nurse Organization of Oklahoma (n = 14).

Health Information Topics and Information Sources

Results describing school nurses' frequency searching for health information topics are displayed in Figure 1. Based upon the median values of responses rating the frequency of searching for health information topics, school nurses indicated searching for health conditions, symptoms, treatments, and drug information once a week ($x \approx 4$). Information regarding immunization schedules, physicians or health facilities, and education policies or laws received median values of once a month ($x \approx 3$); information regarding state health policies or law received a median frequency value of less than once a month ($x \approx 2$).

Looking at the usage of specific information sources displayed in Figure 2, the survey indicates a strong reliance on search engines and fellow school nurses; both received median ratings of more than once a week ($x \approx 5$). Closely following, health websites scored a median value of once a week ($x \approx 4$). Other sources, including government websites and nursing or medical books, had median values of once a month ($x \approx 3$). The NASN website, nursing or medical journals, and databases received median ratings of less than once a month ($x \approx 2$), and the category of libraries or librarians received the lowest median rating of never ($x \approx 1$).

Searching Ability and Information Needs

Perceptions of school nurses regarding searching ability and information needs are displayed in Figure 3. Excluding awareness of current research ($x \approx 3$), survey responders were primarily satisfied or strongly satisfied in their perceptions of searching ability and information needs including ability to search for required information ($x \approx 4$), access to information ($x \approx 4$), and access to the Internet ($x \approx 5$). Survey responders also indicated interest in attending classes or workshops regarding health information ($x \approx 4$).

School Health Initiatives

Tulsa County public school nurses indicated their involvement in twenty-eight distinct school health initiatives supplemental to their primary responsibilities in the school nurse office. These initiatives demonstrate the range of services that the school nurse provides and offers examples of the types of projects for which she might need to search for information. Table 2 displays the top ten initiatives from the survey responses, which included topics like vision and hearing screenings, growth and development, STDs and HIV/AIDS, and hygiene.

Focus Group Findings

Five school nurses participated in the one-hour focus group session held at the OU-Tulsa Schusterman Library. Participants represented three of the five largest public school districts in Tulsa County. Three of the nurses supervised elementary schools, one of the nurses supervised a middle school, and one of the nurses supervised both middle and high schools.

After reviewing the results of the survey, participants corroborated most frequently searching for health conditions, illnesses, and medications. Unanimously, the school nurses identified Google as their method for searching. Several of the nurses described collecting large lists of bookmarked websites, including the Centers for Disease Control and Prevention and the Oklahoma State Department of Health immunization schedule guidelines, as methods for

accessing information quickly. A few of the nurses preferred print resources for some of their information needs, particularly for the purpose of identifying drugs. Only one of the focus group participants indicated having a small budget for the school nurse office to acquire resources; thus any of these additional information sources, including medical/nursing reference books, were self-purchased.

The focus group participants were surprised by the lack of participation in NASN. All but one indicated being members and identified access to the association journal and newsletter, continuing education and conference opportunities, NASN position statements on school health issues, and additional health programs, such as the Vision Service Plan Sight for Students, as membership benefits. Cost was the major factor to joining the association though one of the nurses described a community partner organization that sponsors membership for two of her district's nurses. Each year, this district rotates the membership to different nurses who then share NASN resources, such as journals and newsletters, amongst each other.

Upon moving the discussion toward the needs of the school nurses, focus group participants described time restraints involved in searching for new information as a challenge. The nurses provided examples of scenarios in which they needed to search for information in order to answer e-mail messages and compose handouts for teachers and parents, identify curriculum and educational videos for student health modules, and research new drugs and statistics; however, unless these activities were to be completed on their own personal time, the focus group participants described the school nurse office as too chaotic to conduct these searches without constant interruptions.

Discussion

The results of this assessment provide a broad overview of the school nurse's perceptions of her use of information. In order to execute professional responsibilities and duties, school nurses access a variety of information. Point-of-care information, including health conditions, symptoms, treatment, and medications, is most frequently sought utilizing online sources and leveraging relationships with professional colleagues, which, at this time, is not likely to include librarians. Notable challenges indicated in survey results include high student caseloads, lack of school nursing experience, and disconnection from professional nursing associations and nursing research making time, access, and personal connections important factors affecting the school nurse's use of information.

One interesting discrepancy within the survey results pertains to the school nurse's perceptions of searching ability and needs. Survey respondents reported a higher satisfaction level regarding their ability to search for information than their actual awareness of school nursing research; however, even with high levels of satisfaction, the school nurses had less satisfaction with their access to information and indicated a strong interest to increase their knowledge of and skills to access health information by attending a training workshop. This prediction was verified within the focus group session and points to an area of opportunity for health sciences libraries interested in forming new information outreach partnerships with this population group. Based upon the results from the assessment, specific areas of

need would include point-of-care sources, including health conditions and drug identification; consumer health information for parents, teachers, and students; and skills for identifying and keeping abreast of new research. Furthermore, as school nurses tend to be isolated within their daily practice from their fellow school nurses, they are eager for opportunities to interact with their colleagues.

The OU-Tulsa Schusterman Library utilized the results of this assessment to develop a three-hour workshop covering information resources for school nurses. This workshop was divided into three sections and was piloted among four of the larger public school districts in Tulsa County reaching 63 of the approximate 87 school nurses employed at the time. The first section focused on finding health and drug information, the most frequently searched for topics within the survey. Sources included MedlinePlus, NLM Drug Information Portal, and Pillbox. Addressing the lack of access to current research, the second section provided instruction on using PubMed to find research articles. The third section was structured to introduce the school nurse to a variety of resources specific to school health topics including guidelines, health curriculum, and policies. The workshops consisted of resource demonstrations and team-based active learning exercises to reinforce the training. The Schusterman Library received an Express Outreach Award from the National Network of Libraries South Central Region (NN/LM SCR) to fund the workshop development and execution.

The workshops received overwhelming positive reaction, with the average overall satisfaction rating being 4.95 out of 5. Based upon the comments supplied, the school nurses identified the resources and skills learned as being applicable to their duties and responsibilities. Thus, the information assessment was an integral component to this successful outreach project. Though the assessment cannot be generalized to all school nurses, findings can be used as a foundation for working with this population group to develop similar information outreach initiatives and demonstrates how first learning about one's outreach population can enhance the service provided.

Conclusion

Throughout the process of developing and executing this information needs assessment, the OU-Tulsa Schusterman Library discovered a population of health professionals that, though often unrecognized and underserved, wields great influence on child health and learning outcomes. As a result of this research, the librarians not only gained knowledge of specific roles and responsibilities of school nurses but also perceptions of their information needs and behaviors for the Schusterman Library to consider when working with this population of health professionals. In addition, due to the many points of contact required to conduct the survey and focus group session, the library formed relationships with local school nurses on which to build partnerships and has since developed outreach initiatives that to date have reached almost two-thirds of all public school nurses in Tulsa County. By learning more about and from health professionals, such as school nurses, medical librarians can continue to meet their needs and thus facilitate the overall health objectives of the populations they serve.

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Appendix A. Survey instrument

1. *How often do you search for each of the following types of information as part of your school nursing responsibilities?*

	Never	Less than once a month	Once a month	Once a week	More than once a week
A. Health conditions/illnesses					
B. Symptoms					
C. Treatments					
D. Prescriptions/medications					
E. Immunization schedules					
F. Physicians/health facilities					
G. State health policies/laws					
H. School or education policies/laws					

2. *Please identify any other type(s) of information you frequently search for:*
3. *How often do you consult each of the following sources for information as part of your school nursing responsibilities?*

	Never	Less than once a month	Once a month	Once a week	More than once a week
A. Search engines (e.g., Google, Bing)					
B. Health websites					
C. National Association of School Nurses website					
D. Government websites (local, state, or federal)					
E. Nursing/medical books					
F. Nursing/medical journals or magazines					
G. Databases (e.g., MEDLINE, CINAHL)					
H. Fellow nurses					
I. Libraries/librarians					

4. *Please identify any other source(s) you frequently consult for information:*
5. *Please indicate your perceptions regarding the following statements as they pertain to your current position and school environment.*

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
A. I am satisfied with my ability to search for information necessary to perform my school nursing responsibilities.					
B. I have convenient access to information sources needed to perform my school nursing responsibilities.					
C. I am aware of current research related to school nursing practices.					
D. I would be interested in attending a class or workshop regarding access to health information.					
E. I have convenient access to Internet while at school.					

6. *In the space below, please describe any school health initiatives (such as health awareness campaigns, screenings, or education) in which you are involved:*
7. *Please verify the following statements:*

I am licensed as a registered nurse by the Oklahoma State Board of Nurse Registration Education. Yes No

I am certified by the Oklahoma State Board of Education. Yes No

8. *How many years of experience do you have as a registered nurse? (Please select one)*

0-2 years 3-4 years 5-9 years 10 or more years

9. *How many years of experience do you have as a school nurse? (Please select one)*

0-2 years	3-4 years	5-9 years	10 or more years
10. ***Please select the organizations in which you are a member: (Select all that apply)***
- National Association of School Nurses
- School Nurse Organization of Oklahoma
11. ***Select the appropriate level of school that you oversee (choose all that apply):***
Elementary School	Middle School	High School
12. ***Estimate the number of students for which you are responsible:***

Appendix B. Focus Group Questions

1. We'll begin by looking at the results of the survey that you all took last fall. This handout includes all of the questions in the survey in addition to a graphical representation of the results. Take a few minutes to look over this handout, making note of anything you find interesting or surprising.

Follow up question: What do you find interesting about these results? Looking specifically at Figure 6, do you feel that these levels of perceptions are accurate? If not, what do you feel is misrepresented?
2. Let's now start to think about your own searching behavior. Starting in broad generalities, please, think about your "typical" day in the school nurse office. Describe a type of information that you frequently search for to perform your daily responsibilities.

Follow up question: What are sources that you generally use to find needed information? Have you ever consulted databases, like PubMed, or websites, like, MedlinePlus? Why or why not? In a typical Google search, how do you determine the quality and accuracy of the sites that you find?
3. Now, moving from the broad to the specific, can you describe a time when you needed to search for information? What was the situation and what piece of information did you need?

Follow up question: What did you do? How long did your search take you? Were you confident/satisfied with the quality of the information you found?
4. Thinking back on the survey that you took last fall, you were asked to describe school health initiatives in which you were involved or of which you are a part. This screen lists the most commonly described health initiatives from the survey. Do you feel that this is an accurate representation? If not, what is missing?

Follow up question: What is your role in these initiatives? How could you feel better supported in this role?

5. Looking at Figure 3 regarding membership in a school nurse association, only about a third of the survey participants indicated membership. Are any of you members in a school nurse association? If so which association?

Follow up question: How do these professional associations support your work?

6. To close this session, what are some of the biggest challenges that you face as a school nurse (for example lack of time, isolation from medical peers)?

Follow up question: Do these challenges affect your ability to get access to information you need? Thinking back to some of the services I mentioned our library providing and resources that I overviewed, can you envision ways that our library might be able to help address these challenges?

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Figure 1. Frequency Searching for Health Information Topics

Figure 2. Frequency Using Information Sources

Figure 3. Perceptions Regarding Searching Ability and Information Needs

Table 1
Demographic Characteristics of Tulsa County Public School Nurses

	<i>n</i>	<i>%</i>
Years of experience as a RN		
0 – 2 years	1	2%
3 – 4 years	2	3%
5 – 9 years	8	14%
10 or more years	47	81%
<i>Total</i>	<i>58</i>	
Years of experience as a school nurse		
0 – 2 years	14	24%
3 – 4 years	1	2%
5 – 9 years	12	21%
10 or more years	31	53%
<i>Total</i>	<i>58</i>	
School Levels Overseen (<i>select all that apply</i>)		
Elementary School	39	67%
Middle School	18	31%
High School	18	31%
Membership in Professional Organizations (<i>select all that apply</i>)		
National Association of School Nurses	13	22%
School Nurse Organization of Oklahoma	14	24%
Not currently a member of an association	44	76%
	<i>Mean</i>	<i>Minimum</i> <i>Maximum</i>
Estimated Student Caseload	1308	430 3500

Table 2
Top 10 School Health Initiatives Indicated by Tulsa County School Nurses

School Health Initiatives	<i># of Submissions</i>
Vision and Hearing Screenings	28
Growth and Development	17
STDs and HIV/AIDS	16
Hand Washing and Hygiene	14
Dental Health Education	9
General Health Wellness and Awareness	9
School Safety, Policies, and Procedures	9
Immunizations	7
Diabetes Management	6
Drug Awareness	6