

Statistical Data Derived from Alabama Association of School Nurses Survey

Introduction

Participants in the 2006 Alabama Association of School Nurses annual meeting were issued a survey for completion at the meeting in an attempt to gather current data. The survey focused primarily on determining the workplace issues which are of paramount concern to the State's school nurses, such as the major area of practice, the primary health service currently being provided to students, as well as issues requiring the full attention of the Association's leadership. A report of the findings after administration of the survey has been compiled.

Instruments and Processes

Data for the report were compiled from the survey administered to school nurses at the State meeting held in 2006. The surveys were completed manually, and participation was optional. Questions included on the survey are included in Table 1. Questions were validated for content by the leadership personnel of the Alabama Association of School Nurses. A codebook was developed for tabulation of data.

Table 1

Questions Included on Survey

2006-2007 Alabama Association of School Nurses Needs Assessment Tool			
Please mark your answers by circling or writing in the correct responses below.			
RN	LPN	NCSN	Other Nursing Education
How many students are under your supervision?			
Are you the Lead School Nurse _____ If yes, how many nurses do you support in your position? _____ If yes, do you also have schools to provide nursing services for? _____			
How many years have you spent serving as a school nurse?			
Please provide the grades of children you serve.			
Please give the number of schools you serve.			
Do you incorporate the NANDA, NIC, NOC nursing languages into your care plan development?			
Do you have access to and use a computer regularly for documenting nursing care delivered to students?			
Are you paid according to the Teacher State Salary Matrix?			
Using the options below describe the area of your nursing practice where you spend most of your time. Score each option using a number 1 (for most time spent) - 10 (the least amount of time spent).			
- Individualized healthcare plan development			
- Screenings (Vision, hearing, spinal, pediculosis, ect.)			
- Communicable Disease surveillance and immunization compliance			
- Assisting with medications			
- Health case management and counseling			
- Parent Education			
- School Meetings (IHP, IEP, MEDC, 504, BBSST, Special Education)			

- School District policy and procedure development
- Staff training sessions
- Direct nursing care to students (i.e., blood glucose monitoring, injections, catheterizations, tube feedings, tracheotomy care, etc.)
- Other specialized care
Using the number system (1-8) please rate the following nursing measures that in your opinion are the area you would best be served with support of the Alabama Association of School Nurses organization.
- Identification of students with health needs in your school system
- Standardized IHP development
- Parent education of the Role of the School Nurse (media and technical support)
- Physician support of your role (education and media)
- Standardized Emergency care plan development for school and school events
- Measuring student outcomes / data collection
- Ability to measure academic progress of the students you serve
- Development of skills hands on nursing care
Using the numbers system (1-6) please tell us what you feel is the most important to the least important areas for the AASN leadership to prioritize
- Website and Newsletter design and content
- Guidelines and Best Practice Modifications
- Salary Matrix Development
- Student to School Nurse ratios
- Acuity rating tools
- Collaboration with other leading professional agencies - ADPH, AAP, AAFP, etc.

Procedure

The optional survey was manually completed by 194 respondents and submitted at the Alabama Association of School Nurses 2006 meeting. Of the 194 nurses completing the survey, 142 (73.20%) were Registered Nurses (RN) and 52 (26.80%) were Licensed Practical Nurses (LPN); 89 (45.87%) noted that they were members of the American Association of School Nurses in addition to the Alabama Association of School Nurses, while 35 (18.04%) counted themselves as also being members of the National Association of School Nurses. The respondents' years of experience in the field of school nursing ranged from 0.5-26.5 years.

Findings

Initially, descriptive statistics were performed on the data submitted. These revealed that 61 of the responding nurses (31.44%) functioned as lead nurses in their workplace settings. Also, 67 responding nurses (34.54%) noted that they utilize nursing language such as that authorized by the North American Nursing Diagnosis Association in the formulation of plans of care; 65 nurses (33.51%) stated that they have access to a computer for use with such a document. Significantly, only 45 responding nurses (23.20%) reported that they are paid according to the State Teacher Salary Matrix.

The majority of the questions on the survey required respondents to rank responses according to priority. These questions were divided into three sections: a

practice section (Table 2), a support section (Table 3), and a leadership section (Table 4). On the section of the survey designated as the Practice Grid, 40.21% of respondents stated that most of their time each day was spent in direct student skilled services. On the section designated as the Support Grid, 17.01% of respondents stated that identifying students in needs of health services was of primary importance to them in their current workplace setting. Finally, on the section designated as the Leadership Grid, 30.93% of respondents stated that the Association leadership should be primarily concerned with the school nurse salary matrix.

Table 2

AASN Practice Grid Statistical Results

ITEM	RANKED LEVEL OF IMPORTANCE (1 = most important, 10 = least important)	NO. OF NURSES RESPONDING	PERCENTAGE OF NURSES RESPONDING
Individualized Healthcare Plan	1	17	8.76%
	2	17	8.76%
	3	26	13.40% (primary response)
	4	16	8.25%
	5	25	12.98%
	6	7	3.61%
	7	9	4.64%
	8	7	3.61%
	9	3	1.55%
	10	4	2.06%
Screenings	1	9	4.64%
	2	16	8.25%
	3	19	9.79% (primary response)
	4	19	9.79% (primary response)
	5	18	9.28%
	6	12	6.19%
	7	11	5.67%
	8	10	5.15%
	9	7	3.61%
	10	6	3.09%
Communicable Disease	1	3	1.55%
	2	14	7.22%
	3	18	9.28%
	4	15	7.73%
	5	22	11.34% (primary response)
	6	15	7.73%
	7	13	6.70%
	8	6	3.09%
	9	10	5.15%
	10	18	9.28%

Assisting with Medication	1	34	17.53% (primary response)
	2	30	15.46%
	3	20	10.31%
	4	13	6.70%
	5	11	5.67%
	6	12	6.19%
	7	4	2.06%
	8	1	.052%
	9	6	3.09%
	10	10	5.15%
Health Case Management	1	9	4.64%
	2	15	7.73%
	3	13	6.70%
	4	18	9.28%
	5	21	10.82% (primary response)
	6	13	6.70%
	7	19	9.79%
	8	13	6.70%
	9	6	3.09%
	10	2	1.03%
Parent Education	1	2	1.03%
	2	4	2.06%
	3	5	2.58%
	4	25	12.98% (primary response)
	5	21	10.82%
	6	25	12.98% (primary response)
	7	22	11.34%
	8	18	9.28%
	9	9	4.64%
	10	6	3.09%
School Meetings	1	4	2.06%
	2	5	2.58%
	3	7	3.61%
	4	12	6.19%
	5	10	5.15%
	6	10	5.15%
	7	17	8.76%
	8	26	13.40% (primary response)
	9	17	8.76%
	10	14	7.22%
District Policy Development	1	4	2.06%
	2	4	2.06%
	3	7	3.61%
	4	5	2.58%
	5	7	3.61%
	6	5	2.58%
	7	15	7.73%
	8	11	5.67%
	9	30	15.46%

	10	36	18.56% (primary response)
Staff Training	1	4	2.06%
	2	5	2.58%
	3	12	6.19%
	4	5	2.58%
	5	14	7.22%
	6	8	4.12%
	7	16	8.25%
	8	28	14.43% (primary response)
	9	20	10.31%
	10	16	8.25%
Direct Student Skilled Services	1	78	40.21% (primary response)
	2	13	6.70%
	3	5	2.58%
	4	3	1.55%
	5	4	2.06%
	6	9	4.64%
	7	2	1.03%
	8	4	2.06%
	9	2	1.03%
	10	7	3.61%

Table 3

AASN Support Grid Statistical Results

ITEM	RANKED LEVEL OF IMPORTANCE	NO. OF NURSES RESPONDING	PERCENTAGE OF NURSES RESPONDING
Identification of students in need of services	1	33	17.01% (primary response)
	2	13	6.70%
	3	11	5.67%
	4	12	6.19%
	5	10	5.15%
	6	6	3.09%
	7	8	4.12%
	8	12	6.19%
Standardized Individualized Healthcare Plans	1	27	13.92% (primary response)
	2	14	7.22%
	3	19	9.79%
	4	8	4.12%
	5	17	8.76%
	6	5	2.58%
	7	8	4.12%
	8	10	5.15%
Parent education materials	1	7	3.61%

	2	12	6.19%
	3	12	6.19%
	4	12	6.19%
	5	21	10.82% (primary response)
	6	21	10.82% (primary response)
	7	12	6.19%
	8	8	4.12%
Physician support of role of school nurse	1	5	2.58%
	2	18	
	3	13	6.70%
	4	19	9.79%
	5	13	6.70%
	6	12	6.19%
	7	15	7.73% (primary response)
	8	10	5.15%
Standardized emergency medical care plans	1	14	7.22%
	2	27	13.92% (primary response)
	3	24	12.37%
	4	17	8.76%
	5	6	3.09%
	6	11	5.67%
	7	8	4.12%
	8	0	0
Measuring student outcomes	1	6	3.09%
	2	11	5.67%
	3	10	5.15%
	4	17	8.76%
	5	19	9.79% (primary response)
	6	17	8.76%
	7	16	8.25%
	8	7	3.61%
Measuring student academic success	1	4	2.06%
	2	2	
	3	5	2.58%
	4	8	4.12%
	5	10	5.15%
	6	7	3.61%
	7	27	13.92%
	8	38	19.59% (primary response)
Developing hands-on skills	1	13	6.70%
	2	12	6.19%
	3	14	7.22%
	4	11	5.67%
	5	10	5.15%
	6	22	11.34% (primary response)
	7	3	1.55%

	8	19	9.79%
--	---	----	-------

Table 4

AASN Leadership Grid Statistical Results

ITEM	RANKED LEVEL OF IMPORTANCE	NO. OF NURSES RESPONDING	PERCENTAGE OF NURSES RESPONDING
Website/PR	1	1	0.52
	2	7	3.61%
	3	15	7.73%
	4	20	10.31%
	5	17	8.76%
	6	45	23.20% (primary response)
Best Practice guidelines	1	27	13.92%
	2	26	13.40%
	3	32	16.49% (primary response)
	4	15	7.73%
	5	7	3.61%
	6	2	1.03%
School nurse salary matrix	1	60	30.93% (primary response)
	2	30	15.46%
	3	9	4.64%
	4	4	2.06%
	5	2	1.03%
	6	4	2.06%
School nurse to student ratios	1	15	7.73%
	2	25	12.89%
	3	26	13.40% (primary response)
	4	9	4.64%
	5	14	7.22%
	6	9	4.64%
Acuity tools	1	4	2.06%
	2	4	2.06%
	3	11	5.67%
	4	36	18.56% (primary response)
	5	27	13.92%
	6	24	12.37%
Collaboration	1	1	0.52%
	2	6	3.09%
	3	14	7.22%
	4	27	13.92%
	5	37	19.07% (primary response)
	6	21	10.82%

After calculation of descriptive statistics and tabulation of responses to rank-order

survey questions, in-depth statistical analysis was performed in an attempt to determine relationships existing between multiple variables. Initially, Pearson Product-Moment Correlation Coefficients (Table 5) were calculated in order to explore the relationships between the variables which did not require ordinal measurement. However, preliminary analyses revealed a violation of the assumption of normality when calculation of a Kolmogorov-Smirnov statistic yielded a significant result of .000. Furthermore, a scatterplot generated from graphing the variables of Pay and Nursing Education showed violation of the assumptions of both linearity and homoscedasticity as well. Because the assumptions for use of Pearson Product-Moment Correlation coefficients were not met, the non-parametric technique of Spearman's Rank Order Correlation was utilized. This produced results identical to those generated through use of the Pearson technique, thus lending some validity to the statistics produced.

Table 5

Results of Generation of Pearson's Product-Moment Correlation Coefficients

ITEMS	PEARSON'S R VALUE	COEFFICIENT OF DETERMINATION	PERCENTAGE OF SHARED VARIANCE
Nurse education and Serving as Lead nurse	-.410	.1681	16.81%
Nurse education and Use of nursing language	-.410	.1681	16.81%
Nurse education and Access to computers	-.430	.1849	18.49%
Nurse education and Pay according to state teacher's matrix	-.333	.1109	11.09%
Use of nursing language and Access to computers	.954	.9101	91.01%
Use of nursing language and Pay according to state teacher's matrix	.811	.6577	65.77%
Access to computers and Serving as lead nurse	.954	.9101	91.01%
Access to computers and Pay according to state teachers' matrix	.774	.5991	59.91%
Pay according to state teachers' matrix and Serving as lead nurse	.811	.6577	65.77%

Based on the statistics derived from calculation of Pearson's Product-Moment

Correlation Coefficients, there appear to be relationships existing between several variables which were utilized in the study. For example, it appears that as a nurse's level of education increases, the likelihood of serving as Lead Nurse decreases. Furthermore, as the level of nursing education increases, the use of nursing language such as that approved by the North American Nursing Diagnosis Association (NANDA) in plans of care, access to computers for use with such documents, and pay according to the state teacher's matrix all decrease. This could be reflective of nurses moving out of the field because of dissatisfaction with pay, promotion, and technology; however, it is paramount to remain aware that correlation does not equate with causation.

Other relationships between variables were also noted to exist. There is a strong correlation between use of nursing language in plans of care and access to computers, as well as access to computers and service as Lead Nurse. Furthermore, as use of nursing language and computer access increases, pay seems to be more likely to occur according to the State Teachers' Matrix, and the likelihood of serving as Lead Nurse seems to increase. This would indicate that Lead Nurses typically receive pay which is reflective of the State Teachers' Matrix, usually have increased access to computers, and usually utilize accepted nursing language and terms more often in constructing plans of care than the average school nurse. However, it does not appear that either pay or promotion are positively correlated with nursing education.

Limitations

The limitations of the research conducted primarily relate to validity and generalizability. Although random sampling was utilized because nurses were asked to participate in the survey and could opt not to complete it, poor validity exists because of the wording of questions. The information originally intended may not be obtained because of respondents being asked primarily rank-order questions. Responses to such questions are difficult to code in order for meaningful statistical analysis to occur. Another limitation existing was a design constraint in terms of not only the form of question asked, but the type of question as well. Very few demographic questions were asked about the nurses opting to complete the survey, so therefore no information is available regarding respondents' location, age, gender, or years as a nurse in fields other than school nursing. Furthermore, terms utilized in the survey should be clarified for users. Use of the term "case management" in one of the questions could be construed to mean many things to various readers according to their background; it is doubtful that the question in its present form would yield the desired information. Finally, many concerns were listed by school nurses under the comments section of the survey. These should all generate new questions for the 2007 survey.

Summary of Findings

Calculation of descriptive statistics revealed the following:

- 194 respondents
- 142 RN (73.20%)
- 52 LPN (26.80%)
- 89 members of American Association of School Nurses in addition to Alabama Association of School Nurses
- 35 members of National Association of School Nurses in addition to Alabama Association of School Nurses
- years as school nurse range from 0.5-26.5
- 61 nurses are lead nurses (31.44%)
- 67 nurses utilize nursing language in their plans of care (34.54%)
- 65 nurses have access to a computer (33.51%)
- 45 nurses are paid according to the teacher salary matrix (23.20%)

Qualitative analysis of survey responses revealed the following:

- on the section of the survey designated as the Practice Grid, 40.21% of respondents stated that most of their time each day was spent in direct student skilled services
- on the section of the survey designated as the Support Grid, 17.01% of respondents stated that identifying students in need of health services was of primary importance to them
- on the section of the survey designated as the Leadership Grid, 30.93% of respondents stated that leadership should be primarily concerned with the school nurse salary matrix

Statistical breakdown utilizing Pearson's Product-Moment Correlation Coefficients as well as Spearman's Rank-Order Correlations revealed the following:

- there appear to be relationships existing between several variables which were utilized in the study. For example, it appears that as a nurse's level of education increases, the likelihood of serving as Lead Nurse decreases.
- as the level of nursing education increases, the use of nursing language such as NANDA in plans of care, access to computers, and pay according to the state teacher's matrix all decrease. There is a strong correlation between use of nursing language in plans of care and access to computers, as well as access to computers and service as Lead Nurse.
- as use of nursing language and computer access increases, pay seemsto be more likely to occur according to the State teachers' matrix, and the likelihood of serving as Lead Nurse seems to increase. It does not appear that either pay or promotion are positively correlated with nursing education.

Areas of Concern for School Nurses

Qualitative analysis of the data submitted revealed that school nurses had several areas of concern which should generate additional questions on future surveys. These areas are listed in Table 6.

Table 6

Areas of Concern for School Nurses

Section of Survey	Area of Concern
Practice Grid	Documentation; field trips; substitution for absent nurses; direct care to students; additional time needed to network during meetings; SDE Health Manual; responsibilities of the lead nurse; supervision of other personnel; serving as Abstinence Coordinator; serving as Children's First grant administrators
Leadership Grid	Job descriptions; acknowledgement of daily duties; salaries equivalent to workloads; active district meetings; statewide communicable disease policies; BSN working as LPN pay scale; need for clarified expectations as well as support for lead school nurses; need for pay above teachers' salaries because of the increased liability; annual reminder of fees; need for both meetings and continuing education opportunities in North Alabama; opportunities for National Association of School Nurses certification

These areas of concern reveal the scope of the duties being required of Alabama's school nurses. Assignments such as serving as Abstinence Coordinator and the Children's First grant administrator require knowledge and skills which the average school nurse may not possess. Furthermore, the requirement of serving as the Lead Nurse was mentioned more than once in the comments section. Perhaps nurses who are promoted to this position could attend a training course to prepare them for assumption of supervisory duties. The frustration with the pay scale for school nurses was mentioned more than once as well. In a state where some schools still do not have even one nurse, loss of a skilled professional could be life-threatening for the students served by the public schools' health services.

Recommendations for Future Surveys

In conclusion, analysis of the 2006 survey generated a set of recommendations for areas which could potentially increase the validity and generalizability of the 2007 survey. These areas include:

1. additional questions involving demographic data-Respondents should be asked their gender, educational preparation (Diploma, Associate's degree, Bachelor's degree, or higher degree), any certifications possessed, years served as lead nurse if applicable, and previous nursing experience prior to becoming a school nurse.
2. additional identifying information-Since no nurse's name or assigned school(s) are

provided, if a question arises regarding data provided, there is no way to contact the respondent in order to obtain clarification.

3. eliminate rank-order responses to questions-Rank-order responses are virtually impossible to code in order to achieve a meaningful statistical result. Provide questions with several numbered choices in order to obtain a more specific answer from the respondent.

4. larger area of the survey for comments from respondents-Since respondents tended to list broad areas of concern such as “field trips”, it is important to obtain clarification regarding the specific concerns existing.

5. additional questions generated based on comments received from respondents-As previously noted, the concerns noted by respondents in the comments section should be reflected by the addition of new questions on the next survey.

6. clarification of terms used in questions-Terms such as “case management” used in questions can lead to confusion unless they are clearly defined by the survey coordinator.

7. incentive for completion of the survey-In order to increase the number of nurses completing the 2007 survey, offer an incentive such as continuing education units for respondents who complete and submit the survey as requested. Since a 55.4 % response was achieved with 194 out of the 350 nurses at the meeting completing the survey without any incentive being offered, use of such a technique might increase the response rate substantially.