

IDENTIFYING SCHOOL NURSES' KNOWLEDGE OF FETAL ALCOHOL SYNDROME

Linda M Caley, Ph.D., RN

School of Nursing, University at Buffalo, State University of New York, USA

ABSTRACT

Background

School nurses are among the first to know an adolescent is pregnant and are critical in identifying that a child's struggles in school may be related to their previous health history. Enhancing nurses' knowledge and skills in primary, secondary, and tertiary prevention of Fetal Alcohol Syndrome (FAS) should help population-based FAS prevention efforts.

Objectives

1) Identify school nurses' general knowledge and perceived educational needs about FAS and, 2) test the applicability for nurses of a national Fetal Alcohol Syndrome Knowledge Survey developed for physicians and adapted for other health professionals.

Methods

We conducted a pilot study. Findings were analyzed with descriptive statistics. Informal discussions with key leaders provided further suggestions for the survey.

Results

All nurses in this study knew that pregnant and potentially pregnant women should abstain from alcohol. A significant majority could identify the effects of prenatal alcohol exposure on the child. They were less likely to know about binge drinking, FAS epidemiology, or facial dysmorphism. Over 70% requested more information on 13 FAS competencies identified in the survey. The instrument captured neither the range of activities school nurses could conduct to prevent and treat FAS nor the wide range of populations they serve.

Conclusions

This study identified three areas to target information for school nurses: binge drinking, FAS epidemiology, and facial dysmorphism. Before conducting a larger study, the instrument needs revision to accommodate school nurses' wide range of educational levels and responsibilities, and to include questions related to nursing interventions that support diagnosis and referral.

Key Words: fetal alcohol spectrum disorder, fetal alcohol syndrome, nursing interventions, secondary disabilities, fetal alcohol syndrome

Developing educational programs to help health care professionals prevent and treat the effects of prenatal exposure to alcohol has become a public health priority in the United States.¹ Educational programs on prenatal alcohol exposure for nurses are critical.

As the largest number of health care professionals in the United States², nurses see patients of all ages in multiple settings: prenatal clinics, labor and delivery, well-child care settings, hospitals, schools, rehabilitation centers, and home visits. School nurses, working with

families and children from prekindergarten through high school, are positioned to play a key role in primary, secondary, and tertiary interventions for fetal alcohol spectrum disorder (FASD), including fetal alcohol syndrome (FAS). Depending on their particular practice, school nurses provide education to teachers and parents, health assessment screening, physical examinations, referrals for special education and related services, and coordination with community organizations. They may be among the first people to know when an adolescent becomes

pregnant, and they are critical to the early identification and treatment of children who do not exhibit the effects of prenatal alcohol exposure until they enter preschool and display difficulties in learning, memory, and executive functioning.

OBJECTIVES

We undertook this pilot study to identify school nurses' general knowledge about FAS and their perceived educational needs. We wanted to know about school nurses' knowledge, attitudes, and beliefs about diagnosis, treatment, and prevention of FAS; their current practices; and for what competencies identified in the survey they needed education. We were also interested in evaluating questions from the national Fetal Alcohol Syndrome Knowledge Survey, developed for physicians and adapted for other health professionals³, to determine what needed to be changed or added before using the survey with a larger population of nurses.

METHODS

This was a pilot study designed to gather preliminary information and to test the instrument.

Study population

The population of interest was school nurses. For this pilot study a convenience sample of school nurses attending a statewide conference in New York State was used. The 100 nurses attending the conference were invited to participate. Of these, 25 completed the survey. All of the respondents were White, non-Hispanic women between the ages of 37 and 61 with the majority in their 50s (56%). The majority (96%) were currently working as school nurses and 1 (4%) was retired. The highest educational degree the respondents' had earned was as follows: baccalaureate (44%), associate's (24%), master's (16%), and diploma (16%).

Data collection

Human subject approval was obtained before starting the study. Data was collected using a survey inserted into the conference packet provided to each attendee. Surveys were accompanied by a letter that described the purpose

of the study, assured confidentiality of the data, and explained that participation was voluntary.

Instrument

The survey consisted of four sections: general knowledge, diagnosis and treatment, training/perceived competence/perceived needs, and background information. Questions from the original survey that related to using specific physician diagnostic schemas and specific types of physician training materials were not included.

Data analysis

One-way frequencies (for categorical variables) and descriptive statistics (for continuous variables) were conducted for each variable.

RESULTS

General knowledge and perceived educational needs

Prevention

All respondents (100%) knew that pregnant women or women planning to become pregnant should abstain from consuming alcohol. The most frequent answers for how many drinks per occasion would constitute binge drinking for pregnant women were: 2 (40%), 1 (20%), and 3 (16%), although one subject answered 12 and another 14.

Epidemiology

Prevalence rates for FAS vary between 0.2 and 2 per 1,000 births.^{4,5} The overall prevalence rate of 1 per 1,000 was chosen by 40% of respondents with 28% thinking it was more frequent (1 in 100), 24% thinking it occurred more rarely (1 in 10,000) and 8% not knowing. Alcohol use during pregnancy is associated with high poverty, low income, and low education although FAS can and does occur in all races and across all socioeconomic status (SES) levels. The currently reported prevalence rate for FAS in the United States is higher in lower socioeconomic groups and in economically disadvantaged populations.^{4,5} Although the majority of the respondents (52%) recognized that disadvantaged economic and ethnic groups have higher rates of FAS, a significant minority (48%) believed that FAS occurs in similar rates in all SES groups.

Effects of prenatal alcohol exposure

Children exposed prenatally to alcohol do not all present in the same way and there is wide variability in the cognitive, behavior, and social

problems associated with FAS. The respondents were asked which, of ten problems, they considered to be associated with FAS.

Problem	YES (%)	NO (%)	DON'T KNOW (%)
Infantile Withdrawal Syndrome	84	0	16
Delayed development	100	0	0
Birth defects/malformations	88	0	12
Psychiatric (DSM IV) disorders	96	0	4
Lowered IQ/retardation	100	0	0
Behavioral problems	100	0	0
Low birth weight	92	0	8
Long term emotional disorders	92	0	8
Addictions	76	0	24
Attention deficit hyperactivity disorder	68	4	28

Table 1 shows the response. All of the participants (100%) considered delayed development, lowered IQ/retardation and behavioral problems to be associated with FAS. Most knew that psychiatric disorders (96%), low birth weight (92%), and long term emotional disorders (92%) may be associated. Fewer recognized the association between infantile withdrawal symptoms (84%), addictions (76%), and attention deficit hyperactivity disorder (68%).

Recognition of FAS

Few school nurses correctly identified the facial features associated with FAS: short palpebral fissures (20%), smooth philtrum (32%), and thin upper lip (48%). In fact, they frequently choose the incorrect answers: large intercanthal distance (72%), full lips (12%), or flaring nostrils (28%). Additionally, 36% of the participants indicated that they did not know, or were unsure what facial features were associated with FAS.

TABLE 2 Percent Needing Preparation to Identify, Diagnosis, Manage or Coordinate Treatment of Children with FAS (N=25)

In general how prepared do you feel to :	Very Prepared (%)	Somewhat Prepared (%)	Somewhat Unprepared (%)	Very Unprepared (%)
Identify children with possible FAS or other alcohol-related disorders?	4	26	32	40
Diagnose children with FAS and other alcohol related disorders?	4	12	12	72
Manage/coordinate the treatment of children with FAS and other alcohol-related disorders?	4	16	32	48

Diagnosis and treatment

The majority of nurses reported that, in the past 12 months, they had not suspected a patient of having FAS (64%), had not recognized a patient as having FAS (76%), diagnosed no patients as having FAS (76%), referred no patients to confirm FAS (84%), and cared for no children with FAS (80%). One of the most important findings was that 52% of the school nurses reported they rarely/never provide advice and education on the consequences of alcohol use during pregnancy to adolescent female patients. Only 20% reported that they always or almost always do and 20% reported that they sometimes do.

Educational needs

The survey asked respondents how prepared they felt to identify, diagnose, and manage or coordinate the treatment of a child with FAS and other alcohol-related disorders. As table 2 shows, the majority of respondents felt somewhat or very unprepared in these areas. The survey also asked respondents to identify for which of 13 different competencies they need more information. Table 3 shows their responses. At least 80% reported needing more information on eight of the competencies and more than 70% reported needing more information on the remaining five competencies.

Applicability of survey

Piloting the survey at a conference gave the respondents a chance to offer feedback on the survey itself. After completing the survey, many respondents commented that they now realized there were intervention activities they were not currently doing, but should be. Discussions with the conference leadership following the survey identified specific interventions, not on the original survey, that school nurses routinely conduct. These activities include⁶: raising public awareness, community education, early detection and treatment, and outreach. In addition, information on the specific ages, educational levels, and practice settings the school nurses worked with was not on the survey. Conference leadership felt this could affect interpretation of the results. For example, if a school nurse is working with nonadolescents, they may never be in a position to give advice on the consequences of alcohol use during pregnancy to adolescent female patients. They may, however, be in a position to give advice on the consequences of drinking to parents and school staff at such functions as parent-teacher association meetings.

TABLE 3 Percent Indicating Need for More Information for Each of Thirteen Competencies (N=25)

Competency	YES (%)	NO (%)
Recognizing the constellation of features associated with FAS and other alcohol-related effects	88	12
Understanding of the basic biomedical mechanisms that result in FAS	80	20
Selecting valid and reliable assessment instruments to screen for/diagnose FAS and other alcohol-related disorders	80	20
Identifying risk factors and interventions for secondary FAS disabilities	84	16
Planning and performing clinically relevant treatment and management plans to assist and aid both the patient with FAS and their families	80	20
Making referrals, when appropriate, for further workup in a child with FAS	80	20
Appreciation and ability to use interdisciplinary team evaluations for individuals with FAS	72	28
Assisting clients in accessing local FAS-related resources, including family support	84	16
Utilizing techniques for effectively communicating information to individuals with FAS, their family members, and care providers	80	20
Providing ethical protections to the patient with FAS regarding confidentiality and autonomy	72	28
Educating pregnant women about the effects of alcohol on their babies	72	28
Screening women for risky or hazardous drinking	72	28
Conducting alcohol cessation brief interventions	72	28

CONCLUSIONS

The results of this small pilot study are not generalizable, so a larger study is clearly indicated. However, the results of this study give a beginning picture of the educational needs of school nurses as well as areas of the survey instrument that require further refinement before it is used with a larger sample of nurses.

General knowledge and perceived educational need

The school nurses in this study had particular strengths in knowing that pregnant women should abstain from alcohol use during pregnancy and in

recognizing the effects of prenatal alcohol use on the child. They were less knowledgeable about binge drinking, the epidemiology of FAS, and the facial dysmorphism associated with FAS. These last two factors may play some part in the fact that few participants reported suspecting, recognizing, referring, or providing care for a child with FAS. Clearly, based on the respondents' answers, school nurses need and want more information on the 13 competencies identified in the survey.

Survey applicability

The instrument needs to be refined before further use to accommodate the wide range of educational levels and responsibilities of school nurses and

nurses practicing in other settings. We had expected that a larger proportion of the respondents would hold a master's degree or be licensed as a nurse practitioner. To accommodate the many educational levels, questions regarding diagnosis and treatment need to be further refined. For example, the instrument should include steps leading up to diagnosis that would be appropriate for most school nurses who are not nurse practitioners, such as identifying high risk populations for screening. Additional questions related to population-based education and aspects of coordination and case management appropriate for nurses from all educational backgrounds are needed, along with more specific questions on the type of school or institution where the nurse practices.

Acknowledgements

The author would like to thank Susan Adubato, Project Director for the FAS Diagnostic Center at NJ Medical School for sharing the original survey and Nancy Shipkey and Christine Dunlap, research assistants, for assistance in preparing and analyzing the survey.

Corresponding Author: lcaley@buffalo.edu

REFERENCES

1. Weber MK, Floyd RL, Riley EP, Snider DE Jr. National Task Force on Fetal Alcohol Syndrome and Fetal Alcohol Effect: defining the national agenda for fetal alcohol syndrome and other prenatal alcohol-related effects. *MMWR - Morbidity & Mortality Weekly Report*. 2002;51(RR-14):9-12.
2. Spratley E, Johnson A, Sochalski J, Fritz M, Spencer W. The registered nurse population, March 2000: findings from the National Sample Survey of Registered Nurses. United States Department of Health and Human Services, Health Resources and Service Administration, Bureau of Health Professions, Division of Nursing. Available at: <http://bhpr.hrsa.gov/healthworkforce/reports/rnsurvey/rnss1.htm> Accessed January 31, 2006.
3. Adubato S. (personal communication, January 27, 2004) Fetal Alcohol Syndrome Knowledge Survey: Nursing Students.
4. Sampson PD, Streissguth AP, Bookstein FL, et al. Incidence of fetal alcohol syndrome and prevalence of alcohol-related neurodevelopmental disorder. *Teratology*. 1997;56(5):317-326.

5. Egeland GM, Perham-Hester KA, Gessner BD, et al. Fetal alcohol syndrome in Alaska, 1977 through 1992: an administrative prevalence derived from multiple data sources. *American Journal of Public Health*. 1998;88(5):781-786.
6. Caley L, Kramer C, Robinson L. Fetal alcohol spectrum disorder. *Journal of School Nursing*. 2004;21(4):139-146.