School Nurse Knowledge and Perceptions of Recurrent Abdominal Pain: Opportunity for Therapeutic Alliance?

Nader N. Youssef, MD, Thomas G. Murphy, MD, Stephanie Schuckalo, APN, Charlotte Intile, LCSW, and Joel Rosh, MD

Recurrent abdominal pain of childhood affects up to 15% of school-age children, who face significant psychosocial consequences, including school absence. Because assessment of recurrent abdominal pain is frequently made at the school nurse level, a questionnaire was sent to 425 school nurses to evaluate perceptions about recurrent abdominal pain. Among the responses, 47.1% believed children were faking or seeking attention; 3.6% considered it a serious disease; 77.9% stated that affected children should see a physician; 51.5% believed they should relax; and 25.0% believed they needed medicine. Results indicated that school nurses were unclear on epidemiologic and etiologic features of recurrent abdominal pain and had negative views that may inadvertently contribute to the anxiety felt by affected children. Education of school nurses and communication from physicians may advance strategies designed to reduce the fiscal and social costs associated with this common childhood condition.

Keywords: recurrent abdominal pain; children; school nurse

Recurrent abdominal pain (RAP) is a prevalent disorder affecting 10% to 15% of school-age children. Abdominal pain is a common reason for presentation to the primary pediatrician, responsible for more than 750,000 annual office visits. There is evidence that RAP in childhood will lead to increased health care utilization in young adulthood. Similar functional gastrointestinal disorders, such as irritable bowel syndrome, affect 70 million adults in the United States and are responsible for a billion dollars a year in health care and lost wage costs. These data underscore the potentially devastating social and fiscal costs of RAP, a common childhood disease, and highlight the importance of early identification and intervention.

The school nurse has a crucial role in the provision of school health services and is the first health care provider sought by children with acute and chronic medical issues. Schneider et al reported that infections, headaches, minor trauma, and stomachaches are the most common reasons for presentation to the school nurse’s office. In addition to pain, children with RAP may experience social withdrawal and features of anxiety and depression. Patients with similar functional gastrointestinal disorders may have sleep difficulties, headaches, dizziness, and fatigue. Students reporting to the nurse’s office commonly report “stress” and “not sleeping well” as factors responsible for their presenting symptoms. It is common for school nurses to frequently recommend periods of rest and often send children home early as well as to suggest further physician evaluation before returning to the classroom or other activities.

Articles in publications for school nurses examine many common, chronic pediatric medical conditions.
such as asthma, diabetes, and headaches, yet to our knowledge no formal studies have been done of school nurse knowledge and perception of RAP. The aim of this study was to assess the fund of knowledge and overall perceptions of the school nurses who commonly care for children with RAP and to determine the need for educational programs in this caregiver population.

Methods and Subjects

The New Jersey State School Nurses Association is a professional organization with more than 1200 members. School nurses were surveyed from the 7 counties that are serviced by Atlantic Health System. The Institution Review Board of Atlantic Health System approved the study. Schools were selected to represent varying student populations in respect to school size, age of students, racial make-up, and socioeconomic status.

Between October 2004 and November 2004, 425 school nurses were mailed a 21-item questionnaire exploring their years of total nursing and school nurse experience, level of education, school size, and age range of students. Nurses were provided with the Apley and Naish's descriptive definition of RAP at the beginning of the survey. Respondents were asked to check applicable responses to questions including whether they see children with RAP, the frequency with which they see children with RAP, the estimated gender and age range of children with RAP, and their perceptions of children with RAP (eg, frequency of absenteeism, severity of disease, personality traits of children with RAP and their families, and necessary interventions). Finally, respondents were asked to check appropriate provided responses to questions about their own knowledge of RAP and current treatment modalities, the quality of communication with physicians about RAP, and the availability of information about RAP. Surveys were coded for anonymity.

Outcomes

The primary outcome measure of this study was the determination of school nurse knowledge of RAP. Knowledge assessment included etiology of RAP, epidemiology associated with RAP, and treatment options. Secondary outcome measures included school nurse perception of children with RAP. Additional outcome measures included self-reported assessment of the school nurse's own understanding of RAP, quality of communication with physicians about RAP, and availability of information about RAP.

Data Analysis

Differences between groups were analyzed by means of the Mann-Whitney test for ordinal variables; for correlations, Spearman rank coefficients were used. A level of $P < .05$ was used to indicate a statistically significant result, adjusted for multiple comparisons by means of Bonferroni corrections.

Results

Of the 425 surveys mailed, 141 surveys were completed and returned, a 33.2% response rate. Registered nurses comprised 94.3% (133) of respondents. Respondent schools were diverse in size, age of students, race, socioeconomic background, and student functional status, with a mean student population of 496. Mean total nursing experience was 26.2 years, with a mean school nurse experience of 11.2 years.

There were 140 respondents (99.3%) who reported seeing patients meeting the criteria for RAP, as defined in the survey. The respondent who denied seeing RAP explained that the entire student body of the school was “autistic” and that they rarely verbalized health-related complaints. The number of school nurses who reported greater than 10 cases of RAP per month was 31%. There were no significant differences in perception of disease severity and availability of RAP information between school nurses with greater than (n = 68) or less than (n = 73) 10 years experience (Table 1).

Primary Outcome

Respondents estimated a 4:1 predominance of girls being evaluated for RAP compared with boys. Half of respondents (70) estimated that children with RAP miss more school than other children. Only 3.6% (5) of respondents believe that RAP is a serious disease, but more than 70% thought physician evaluation and extensive investigation was needed to rule out everything possible. There were 44 (31%) respondents who answered, “don’t know” if RAP is a severe or minor condition.
Secondary Outcomes

The number of school nurses who thought students with RAP were: faking was 66 (47%); seeking attention, 84 (61%); nervous, 43 (31%); sad, 40 (29%); or lazy, 109 (78%; Figure 1). Only 35 (25%) thought that children with RAP needed medication, and 72 (52%) believed that they needed to relax more. Seventy (50.0%) respondents believed that they had a good understanding of RAP, but 114 (81%) thought education on RAP is lacking and 117 (84%) believed that communication with medical doctors about RAP is poor.

Discussion

The school nurse has a central management role in the implementation of school health services programs for all children and youth in school. In the Boston public school system, it is estimated that children are 8 times more likely to see a school nurse than a pediatric health care provider. Our study highlights the need for education at the school nurse level, because health care professionals who commonly evaluate children with RAP hold persistent misconceptions and negative perceptions. Respondents in our study did not consider RAP to be a serious condition, and one third suspected that children were faking symptoms or seeking attention. These findings serve to highlight the current deficit in knowledge and underscore the potential value of professional educational interventions.

More than 99% of the respondents in this survey reported seeing children with RAP, a finding congruent with previously reported data ranking abdominal pain in the top 3 reasons for presentation to the school nurse. However, given the incidence data and mean respondent school-size, the school nurses surveyed here would be expected to see an average of more than 10 cases of RAP per month. Less than one third of respondents reported seeing cases with such frequency, suggesting either under-reporting, inadequate identification, or under-presentation. Negative perceptions and misunderstandings could affect all 3 of these potential explanations.

One third of children with RAP will continue to have symptoms in 5 years. Those who remain symptomatic will utilize greater health care resources in young adulthood and may become adults with functional gastrointestinal disorders such as irritable bowel syndrome. Recent data report the dramatic toll of irritable bowel syndrome on adult quality of life and the enormous financial burden that this condition creates.

Although only 3.6% of school nurses responding in our study described RAP as a serious disease, more than 77% believe that a physician should evaluate such children. This mixed message may frustrate children and their families, as each seek a balance between symptom validation and reassurance. Considering the potential causative role of psychosocial factors, such as anxiety, in the etiology of RAP, such frustration may exacerbate the condition itself. This is supported by earlier investigators who found that of 186 students who presented to the
school nurse for evaluation, those with stomachaches or infections were likely to be most worried about their symptoms. One third of the students considered their lives to be extremely stressful.

The evolving recognition of the persistence of RAP symptomatology, marked by the establishment of international consensus-based diagnostic criteria, validates mention of RAP along with other chronic diseases. Articles in school nurse publications commonly examine the impact of chronic diseases such as asthma, diabetes, epilepsy, and cancer on school-age children, with specific attention to the risks of frequent absenteeism. A recent study suggests that compared with healthy children, more than twice as many adolescents with RAP miss more than 10 days of school per year. Another study reports that children with RAP miss 3 times as many school days as their healthy peers. Parents in that study report that children with RAP miss school more frequently for both gastrointestinal- and nongastrointestinal-related reasons. In our study, 50% of school nurses did not appreciate the associated comorbidity of truancy, thus highlighting the impaired perception of the disease's impact on children.

School nursing has been described as a marginalized profession marked by isolation, role confusion, and barriers to practice. More than 83% of respondents in our study describe communication with physicians as "poor," and this may contribute to all 3 features of school nurse marginalization. Although efforts are under way to reverse this trend by broadening the scope of practice and through continuing education, little work has been done to assess the knowledge and perceptions of school nurses with respect to RAP.

The literature contains useful and encouraging information about the utility of professional education with respect to other common childhood diseases. A study of 336 school nurses in Iowa revealed significant improvement in knowledge and understanding of growth disorders in those respondents who received an educational reference tool. The asthma literature describes a follow-up study of school nurses in Maryland and the District of Columbia, revealing that with education, respondents possessed an appropriate level of knowledge and "myths had been dispelled." Similar results were reported in Taiwan, where school nurses demonstrated improved asthma knowledge and self-reported benefit from educational programs. These studies suggest that school nurses are receptive to learning and that such efforts are commonly successful. Our findings that more than 81% of school nurses believe education about RAP is "lacking" and that communication with physicians is "poor" prove the need for, and benefit of, collaboration.

Educational programs will improve patient identification and student–school nurse rapport, making school nurses more receptive to children with RAP. Opportunities exist, however, for school nurses to have a proactive role in the therapeutic and psychosocial management of disease. Gleeson et al describe a teaching role for school nurses as they provide educational support to children, parents, and teachers. A recent study reported that school nurses with individualized "Asthma Action Plans" are comfortable providing care to children with asthma. School nurses with proper training positively impact adolescent condom usage and smoking.

In collaborative efforts, physicians might define the school nurse's role in the management of RAP. It is reasonable to assume that school nurses would be amenable to such cooperation, as only 50% of respondents describe their own understanding of RAP as "good" and less than 10% believe children with RAP require no intervention at all. Recent studies suggest the efficacy of cognitive-behavioral strategies, such as guided imagery, in the management of RAP symptoms. More than half of the respondents in our study believe that children with RAP need to "relax," and this may portend acceptance of relaxation techniques such as guided imagery as treatment modalities.

The school nurse's potential acceptance of cognitive-behavioral strategies in the management of RAP may represent an area of synergy and cooperation between the school nurse and the treating physician. Studies from Sweden describe successful school-based, nurse-administered relaxation training for children with chronic tension-type headaches. The receptive and proactive school nurse could provide his or her office as a home base to implement these techniques and action plans.

Conclusions

The misunderstandings and negative perceptions of RAP described here represent areas of potential enrichment and growth. School nurses are valuable resources in the spectrum of pediatric public health,
and with the proper information, they could play a critical role in the management of RAP.

References