Exploring the School Nurse’s Perception of Caring for Students with Severe Allergies

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Abstract

The role of the school nurse continually evolves, with an increase in students who are medically fragile, have disabilities and those diagnosed with both acute and chronic illnesses. A major challenge for the school nurse is the number of students with severe allergies. The Centers for Disease Control and Prevention estimates food allergies in children have increased by 50% in the past decade. These allergies can be life threatening and effect one in thirteen children under the age of eighteen, which means potentially two students in each classroom in the U.S. has a severe allergy. School nurses are responsible for providing comprehensive care to these students. Literature demonstrates the role of the school nurse in providing this care is exceedingly complex. A quantitative study was done to explore the school nurses perception of caring for students with severe allergies. The research question guiding the study was, “What does the school nurse perceive as the greatest challenges to providing comprehensive care to the student and their families with severe allergies?” Barriers to care were identified and supported by the literature. The data were collected through an on-line survey tool. The participants consisted of 26 school nurses. The findings answered the research question and provide inspiration for further study.
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Chapter 1: Introduction to the Problem

Introduction

Presentation of Topic

The role of the school nurse continually evolves. It has become more complex with a growing number of students who are medically fragile, including students with disabilities and those diagnosed with both acute and chronic illnesses. A specific challenge for the school nurse is the number of students with severe allergies. One in every 25 students in school has a severe allergy, which can result in a fatal reaction (NASN, 2013).

Best practices must be implemented when caring for these students. The students appear in good health, until they are exposed to the allergen, making it all too easy to dismiss the seriousness of the situation and lose focus on the importance of prevention. Many allergies worsen with repeated exposure, a student may develop only topical symptoms initially but with additional exposure the reaction can escalate.

The school nurse’s perception, or how they view caring for students with severe allergies, may directly impact the care they provide. The school nurse must demonstrate a complete knowledge of allergic reactions, the symptoms, treatments, and most imperatively prevention; this can be overwhelming. The school nurse must equip the staff and school administration to care for students with severe allergies, and must convey the critical nature of anaphylaxis. School staff will not adopt an attitude of caring nor will the critical nature of allergies be realized if the school nurse does not have a full perspective regarding the essentialness of the role. Exploring the school nurse’s perception helped identify barriers to providing optimal care.

Explanation of topic
Research shows that the care of students with severe allergies is complex and the care provided by the school nurse requires a comprehensive approach. There is limited research on the impact of the school nurse’s perspective on care. The school nurse’s perception of caring for students with allergies can impact the student and families’ sense of well being and the student’s safety; and may influence the perception and response of school personnel.

School nurses provide care to the entire school community and many times nurses are facing an overwhelmingly high student to nurse ratio. The National Association of School Nurses recommends a minimum of nurse to student ratio of 1:750 for a general education population, a 1:225 for student populations where daily nursing interventions are required and 1:125 in student populations where there are complex health needs, and a 1:1 in cases of complex continuous care (NASN, 2010). The researcher currently serves as a nurse for 967 students, many of whom are chronically ill and have special needs. Maintaining the safety of student populations with a high acuity can be daunting. In addition, many school nurses feel they work in isolation, and may be the only healthcare provider on site. School nurses are responsible for assuring there is an emergency plan in place for each student with a severe allergy, and that staff is educated to implement the plan if needed. The school nurse must also educate staff on maintaining an allergy safe environment; these tasks require cooperation and willingness of staff members.

The researcher used a quantitative approach, using a simple descriptive design to study the perceptions of the school nurse when caring for students with severe allergies. It is hoped that the research regarding the school nurses perception of caring for students with severe allergies provides insight that may ultimately improve care and increase the quality of the school experience for both student’s and their families.
Problem Statement

Problem Outline

Students may have severe allergies to medications, insect stings, latex rubber, or foods, and sometimes an allergen is unknown and the allergy is deemed idiopathic. School-aged children are being diagnosed at an alarming rate. As previously mentioned, one in twenty-five students have a severe allergy that could result in anaphylaxis, a potentially fatal reaction. Approximately 50% of anaphylactic reactions occur because of a food allergy (NASN, 2013). The most common food allergies are milk, egg, peanut, tree nut, soy, fish, and shellfish. Students with food allergies are more likely to also have asthma and eczema.

Anaphylaxis has a rapid onset and can be fatal; it occurs when tissues in the body release histamines in response to an allergen. The symptoms of anaphylaxis can include topical symptoms such as hives and swelling, and advance to systemic symptoms including tightening of the airways, wheezing, difficulty breathing and swallowing and eventually decreased blood pressure and loss of consciousness. Anaphylaxis affects multiple body systems, and each child differs in the manifestation of symptoms. Students have also reported feeling a sense of doom (NASN, 2013). At this time, there is no cure for severe allergies, only prevention of exposure and immediate treatment if exposure occurs.

Providing care for students with severe allergies presents challenges for school nurses with multiple facets needing to be addressed. The school nurse must focus on preventing reactions, recognizing and treating reactions if they occur and training staff on responding as needed. These tasks are on top of the myriad of cases faced each day with the remainder of the school population and the multitude of health concerns.

Background Information
The prevalence of severe allergies is increasing, with an estimated 8% of school-aged children having a severe allergy. There have been two recent cases in the U.S. of student deaths at school resulting from anaphylaxis that were highly publicized, each 12 months apart. Almost 6 million children are affected by food allergies, and nearly 40% of those have had a serious reaction (Gupta et al). Schools must be prepared to react in the case of an anaphylactic reaction, and also must strive to prevent them. School nurses are at the front line when it comes to these challenges.

Federal legislation requires accommodations be made for students who have severe allergies. These include Section 504 of the Rehabilitation Act of 1973, U.S. Department of Agriculture regulations for school nutrition programs, the American with Disabilities Act Amendment Act of 2008, and the Individuals with Disabilities Education Act. Many schools also have state specific or even county specific policies in place, while some do not.

Causes

School nurses care for the general population of students, as well as for students with unique health care needs. In schools with a high number of those who qualify for free and reduced lunches and in more rural areas, the school nurse may be the only healthcare provider a student has. This leaves the school nurse faced with a multitude of challenges and limited resources. The school nurse must make caring for students with severe allergies a priority, in the midst of the many tasks.

The school nurse is responsible for providing and coordinating the care of these students, yet there is a lack of standardized protocol, which has legal implications. A lack of staff education can prevent school nurses from providing optimal care. Research shows that prevention of a reaction is one of the most challenging tasks. Exposure to allergens takes place
in cafeterias; classrooms and areas used commonly by all classes, reinforcing staff must have knowledge of allergies and their consequences. Many teachers use food as rewards, further complicating the nurse’s role. Many schools have only a part time school nurse or a nurse that may oversee multiple schools. This absence of school nurses negatively impacts outcomes and leaves many schools unprepared to respond in the event of a reaction. Anaphylaxis develops quickly, sometimes within a few minutes of exposure.

School is a great source of stress for students and families with severe allergies; they require reassurance. School nurses must provide a plan of care that provides families with the assurance that their child will be safe while at school. There is sometimes a lack of collaboration. School nurses, administrators and educators need to work as a team with families to assure students with allergies have the best outcome, if this teamwork is not present then the student may suffer.

Rationale and Significance of the Study

Project Importance

The purpose of this study was to find ways to support school nurses in providing care to students with severe allergies. The prevalence is increasing. The care must be comprehensive, and school nurses are stretched thin. School nurses play a pivotal role in meeting the needs of the students, staff, and families in regards to severe allergies. The consequences of a breakdown in implementing the necessary interventions can be devastating; it can range from dividing a school community, effecting parent and student’s emotional state, or at very worse may compromise a life (Pistner, M & Lee, J 2012).

Researching the school nurse’s perceptions helped identify the major obstacles when caring for students and address barriers to providing optimal care. The researcher will use the
information obtained from the research study to assist the Resource Nurses and Health Services to create a community of safety and support for the school nurse. The results of the study demonstrated where the school nurses are most overwhelmed so policies can be implemented that will ensure both the student’s safety and the school nurse’s ability to deliver the best care.

**Research Question**

A quantitative study was done to explore the school nurse’s perception of caring for students with severe allergies. The purpose of the study was to enhance the quality of care provided. The research question focused on the school nurse’s experience and what they perceive as their greatest challenges and barriers. A literature review demonstrated that the approach to caring for students with severe allergies must be comprehensive and include a multidisciplinary team with both parents and school staff. An additional concern was the lack of standardized guidelines. The following research question was used to guide the research and help with formulation of the survey questions:

- What does the school nurse perceive as the greatest challenges to providing comprehensive care to the student and their families with severe allergies?

**Definition of Terms**


*Epinephrine* - 1. A hormone secreted by the adrenal medulla that is released into the bloodstream in response to physical or mental stress, as from fear or injury. It initiates many bodily responses, including the stimulation of heart action and an increase in blood pressure, metabolic rate, and blood glucose concentration. Also called *adrenaline.*
2. A white to brownish crystalline compound, C$_9$H$_{13}$NO$_3$, isolated from the adrenal glands of certain mammals or synthesized and used in medicine as a heart stimulant, vasoconstrictor, and bronchial relaxant (http://medical-dictionary.thefreedictionary.com).

Summary

Literature demonstrates parents of students with severe allergies view school as stress inducing since they believe they no longer control the student’s environment or the threat of exposure (NASN, 2013). Students face the risk of isolation and increased anxiety. Staff can be intimidated or feel inadequate to respond to an allergic reaction. Exposures to allergens occur while in school; it is estimated that 18% of children with known food allergies have reactions because of accidental ingestion at school (Branum and Lukacs, 2008). The school nurse is responsible for providing the care to families and student’s while meeting the needs for staff education. Researching the perceptions of caring for these students provides insight to assist the school nurse in providing optimal care.
Chapter 2: Literature Review

Introduction

The topic for research was conceived with the realization that school nurses have unique challenges as well as unique opportunities to assist students and their families with severe allergies in a holistic manner. A literature review concludes that research is abundant regarding the policies surrounding care for students with allergies (or lack of) and regarding the fundamentals of clinical care. The psychological influence on the student and family has been researched, to a lesser degree. Research continually reveals that care is complex and requires a comprehensive approach by the school nurse. There is limited research on the impact of the school nurse’s perspective on care and outcomes.

Best Practices

The literature review suggests that to improve care for students with severe allergies, there must be a comprehensive approach by the school nurse that is supported by standardized protocols. Evidence based practice should be used consistently, by providing a standard plan of care, students are safe and parents feel more secure (NASN, 2013). The School Access to Emergency Epinephrine Act is a bill that has been introduced to the U.S. Senate (Gregory, 2014). It encourages states to require epinephrine auto injectors stocked in schools so anaphylaxis can be promptly treated. The disparities across the country are many, and legislation must continue to be enacted. Only five states to date have mandatory stock epinephrine, 26 states have guidelines that allow schools to stock epinephrine, but many opt not to (Gregory, 2014). The school nurse has a unique opportunity to not only protect students, but to act as change agent and to protect their role as it continually grows (Sheets, A.H. 2010). School nurses can advocate for mandatory access to epinephrine in each school nation wide.

Keywords/Search Terms
A literature review was comprised of searches using Western Governors University Library. The Federated Database Search was accessed, followed by the Health Professions Databases and the CINAHL Plus with Full Text. Google scholar was also utilized. Searches using phrases that include anaphylaxis and school aged children, and/or school nurses, students with severe allergies, and parent perspective on food allergies in school yielded articles that are prevalent to addressing the topic. Accessing Medline through the EBSCO host provided a variety of articles that pertain to the parent’s perspective and about managing student’s with food allergies in school. There were many articles that pertain to clinical care and policies regarding caring for students with severe allergies in the school setting. Both abstract and full articles were accessed and provided valuable insight. Forty articles were reviewed and twenty-five chosen to support the research question. Articles were peer reviewed and many were written by healthcare providers, most were from professional nursing and medical journals.

**Professional Literature Summary**

Recurrent themes found in the literature were focused on the complex role of the school nurse and need for comprehensive care, and an emphasis on needing a team approach to care, and finally on the family and student’s perspective of living with severe allergies. There is little research regarding the school nurse’s perspective, yet many applicable issues were found in articles that may provide insight regarding barriers that influence the school nurse’s perspective. A few of the articles were written more than five years ago, but the information remains relevant.

**The Role of the School Nurse in Caring for Students with Severe Allergies**

The role of the school nurse has grown over the past decade, with more complex and chronically ill children being served in public schools. The American Academy of Pediatrics (AAP) references the school nurse role as crucial and acknowledges that the school nurse assists in meeting the needs of the whole child and support’s school achievement (AAP, 2008). A student’s health status directly correlates
with their ability to learn. The school nurse supports the student’s success by addressing the physical, emotional, mental and social needs of the students (NASN, 2011).

Currently almost 52 million children (98%) of U.S. children spend their day at school. Nearly 18% of the children have an emotional, physical or health condition that is chronic (AAP, 2008). There has been a 60% increase in children with special needs who also have health impairments (Bloom, 2009). Autism has doubled within this group since 2002. Asthma and diabetes have increased by almost 40% in the same time period (Bloom, 2009). Children with epilepsy are attending school with uncontrolled seizures, requiring school nurses to use emergency medication as management when needed.

School nurses are responsible for not only providing care to children with chronic healthcare needs, but for managing day-to-day health issues and emergencies within the school’s general population. School nurses maintain health records, immunizations, and help to secure medical homes and serve as case managers. School nurses play a vital role in health promotion, prevention and health education. Many school nurses feel overwhelmed because of time constraints due to their many tasks and responsibilities.

Severe allergies are of particular concern to school nurses. School nurses must be educated to identify and respond to an allergic reaction, and have the daunting task of preventing or minimizing exposure; evidence shows that 25% of initial reactions will occur while at school (Leo, & Clark, 2007). Prevention of a reaction has proved the most challenging objective, as cited in a survey of 400 school nurses (Weiss, Munoz, & Furlong, 2009). Avoidance strategies are hard to determine, and cross contamination presents additional challenges. In many children, contact through skin exposure is not enough to elicit a reaction to a food allergy; however in young children the risk of skin to mouth contacts is high (Mahr & Sicherer, 2010). School nurses must teach proper hand washing and work with
school staff on cleaning of tables where food has been; studies show soap and water are effective means to removing allergens from surfaces while antibacterial wipes alone are not (Mahr & Sicherer, 2010). Exposure can take place in science labs where food may be heated, the vaporization can cause reactions, or in art where food items are used in crafts (Mahr & Sicherer, 2010). School nurses must properly educate staff of these exposure risks. In addition to prevention, the school nurse must help train and coordinate staff in their ability to respond in the event of a reaction.

The school nurse is responsible for providing and coordinating the care of students with severe allergies, yet there is a lack of standardized protocol, which can have legal implications leaving school nurses feeling vulnerable. Studies show that school personnel are often lacking needed legal support (Wiley-Blackwell, 2012). School nurses are the first line of defense in assuring the safety of students and can help to shape policies and protocols regarding allergies in schools, protecting all involved parties.

There are varying studies that show the need for students to carry and administer their own emergency medication due to the precarious nature of reactions. Currently 44 states have laws that provide for students to carry their own inhalers and injectable epinephrine; but school policies vary and there are significant factors that require consideration (Putman-Casdorph & Badzek, 2011). School nurses must take into consideration a student’s age, developmental level and knowledge, which may not be specific in legislation or written policy.

Many schools have a part time school nurse or a nurse that oversees multiple facilities. The lack of consistency and absence of school nurses has negative implications to outcomes and leave many schools unprepared to respond to a reaction. Anaphylaxis can develop rapidly, sometimes within five to thirty minutes of exposure; it is essential to have a school nurse readily available (Hay, Harper, & Moore, 2006). Anaphylaxis is unpredictable, and may be difficult to differentiate from other complaints
a student has; it is critical to recognize it and respond immediately (Schoessler & White, 2013).

**Team Approach to Severe Allergies in School and Impact of Care**

A team approach must be implemented. A systematic approach to caring for students with severe allergies is required (Leo, & Clark, 2007). Teamwork and consistency of policies with anaphylaxis guidelines shows a significantly improved environment for families and for school personnel, including school nurses (Wiley –Blackwell, 2012). Teamwork is essential for providing a safe environment for students; the school nurse must ensure the members on the team include all invested parties such as parents, teachers, and administration (Leo, & Clark, 2007). Studies show that including parents on the team provides them with the reassurance that their student will be competently cared for (NASN, 2013). School nurses are shown to be the core of the team by both addressing the safety of the students and increasing confidence of the families (Pistner, & Lee, 2012). Collaboration is necessary, especially when addressing prevention of exposure to the allergens (Zugger, 2007). If collaboration among the team is not present, there may be fragmentation in care (Russell & Huber, 2013).

The multidisciplinary team should consider education of staff a priority, and have a formalized training to increase both safety and confidence in provision of care (Simmons, D. 2013). School nurses must train staff on identification and treatment of allergies, and especially on emergency protocols (Hay, Harper, & Moore, 2006). A lack of effective staff education can prevent school nurses from providing optimal care. Research shows that nurses may be consistently trained on anaphylaxis management but are not equipped on how best to train other staff (Clarke, 2010).

Not every school has a school nurse present on campus, leaving inadequate training of staff or placing the responsibility on parents to coordinate their student’s care. Parents may take on the role of educating staff regarding their student’s allergies, while they are valuable members of the team in
addressing care, it is not advisable they take on trainings. There is documentation demonstrating the role of educator can be daunting for parents and is not practical (Pistner, & Lee, 2012).

The policies and standards that surround the administration of epinephrine in schools can vary from different states and school systems, limiting team members’ abilities (Pistner, & Lee, 2012). Parents may lack confidence in the school and staff, especially in the absence of a formal plan (NASN, 2013). Many parents receive information from health care professionals that conflict one another, furthering distrust and confusion (NASN, 2013). There can be fear or lack of confidence on the part of staff, decreasing their willingness to participate in the care of students (Simmons, D., 2013). Implementing a team approach can help establish confidence and cohesiveness among staff and families when providing for the needs of severe allergies (Kacica, Kus, & Mane, 2007).

**Family and Student’s Perspective of Severe Allergies**

School is a great source of stress for students with allergies and their families. There is an increased fear of exposure to allergens, and families feel a loss of control (NASN, 2012). A study demonstrates that students are at risk for maladaptation and psychological issues secondary to having food allergies, including the social isolation they may feel at school (Bacal, 2013). The school nurse is in a position to alleviate the fear for both parents and students and empower students to adopt valuable skills in providing for their own safety (Sheets, 2010). Parents and students must be provided with a safe environment with minimal stress to optimize their educational experience (NASN, 2013). If a comprehensive approach to care is not implemented, outcomes are affected.

Dramatic increases in food allergies have resulted in changes in both rules and eating patterns at school. Schools across the nation are altering class party and field trip policies to keep children with severe allergies safe. While it is positive that there is an increased attention to severe allergies, it means there is also a greater awareness from peers. Research demonstrates that students with allergies are
bullied and teased more because of changes in policies, especially elimination of things other students once enjoyed (McQuaid & Jandasek, 2013).

There are many parents of students without allergies who extend little sympathy for those who have them and seem to resent what they view as an infringement on their child’s rights. Many parents have said they don’t want their child’s food choices to be dictated by another’s. One article likens it to a low level threat when compared to the need for metal detectors and police officers in schools, and diminishes the seriousness (Gorman, 1998). There is also dispute among extreme measures and when interventions are too much. These issues can divide parents. Banning allergens is not practical and also creates a false sense of security, but in some schools there are conversations about doing so. Social isolation for parents can occur; evidence shows poorer relationships with other mothers may result (NASN, 2013), leading to parents becoming less involved in their child’s school setting. Students also report isolation, especially in cases where they are not able to share in traditions or meals with other students (Bacal, 2013).

Studies demonstrate that student’s with chronic health concerns, including severe allergies, struggle academically and with adjustment to school environments. Research supports the impact a school nurse can have on a student’s success. A qualitative study was done which tracked the academic success, health and quality of life of 114 students aged 5-19 years old who received school nurse base case management. At the end of the school year, the students reported they gained knowledge that empowered them to manage their allergies more effectively and increased classroom participation and academic success (Engelke, Guttu, Warren, & Swanson, 2008).

Positive educational and health outcomes occur when family centered nursing care is implemented (NASN, 2013). Holistic care should be considered for students with severe allergies (Bacal, 2013). The school counselor or social worker should be involved as needed.
The school nurse must continually respond to the needs of the student and family with sensitivity (NASN, 2013).

**Summary**

Literature demonstrates the need for standard policies and protocols when caring for students with severe allergies, yet policies vary from state to state, and even between school systems from county to county. Identifying the barriers to care by exploring the school nurse’s perception of their greatest challenges provides valuable awareness of policies that require immediate implementation or revision. Literature additionally stresses the need for collaboration and teamwork, and the school nurse is both the leader of the team and responsible for educating staff on caring for student’s with severe allergies. Education among nurses varies; researching the school nurse’s perception and identifying any weaknesses in educating staff may be acknowledged so additional training can be provided. Studies emphasized the complexity of care for these students that is required by the already taxed school nurse, it is hoped that identifying perceptions that cause stress can then be addressed. Researching what the school nurse perceives as barriers provides insight to break through them so students and families receive the best possible care.
Chapter 3 Methodology

Introduction

The researcher used a quantitative approach, using a simple descriptive design to study the perceptions of the school nurse when caring for students with severe allergies. The literature demonstrated there are barriers to providing care that may result from a lack of standard policies as well as a lack of collaboration among staff and also due to the school nurse’s increasingly expanding role. Literature identified outcomes for students with severe allergies are largely based on the school nurse’s interventions and ability to provide comprehensive care. The research question used to assist in formulating the survey questions and what drove the research was, “What does the school nurse perceive as the greatest challenges to providing comprehensive care to the student and their families with severe allergies?”

Setting

Loudoun County, Virginia is a suburb thirty miles outside the Nation’s Capitol, Washington D.C. The researcher resides in Loudon and works for the local public school system. There are 71,372 students and 84 schools in the district. Forty-two schools have registered nurses on site, and forty-two have unlicensed health clinic assistants. There are six registered nurses who act as resource nurses to the unlicensed clinic personnel. The researcher focused on the registered nurses who work in school clinics as the target population.

Participants

The participants were all female since currently there are no males occupying the role. The ages of the nurses varied. Nurses with a minimum of two years of nursing experience were included; the school system requires previous nursing experience to practice in the clinics. Health Clinic Assistants who perform similar roles were excluded to avoid variations based on
educational backgrounds and previous occupations. Registered nurses with varied education levels were included since each has had the same training through the school system. All the nurses working in the school clinics who met the criteria were asked to participate.

**Research Design**

A simple descriptive research design was utilized, a characteristic of this is to focus on a specific population and collect data on their experiences (Tappen, 2011). The researcher had obtained consent from the [redacted] health services director to survey the nurses employed in the school clinics. The researcher shared the survey questions with the director and used this opportunity to pilot the questions. It is important to test the questions before the survey, the researcher may have a concise understanding of the questions because they are immersed in the topic, but it may not be clear to a participant; or the questions may be worded in ways that illicit undesirable responses (Tappen, 2011). The researcher contacted the participants who met the pre-determined criteria by their work email with an explanation of the research and the link to the survey with the informed consent attached. The survey was designed to take each participant about 15 minutes to complete. The researcher requested surveys were submitted within 10 days of participants receiving them.

**Description of Instruments and Tools**

The survey was provided to the participants (Appendix A). The survey utilized the Likert-rating scale for most of the questions and also included a few multiple choice questions and two requiring short answers to discover what the nurses perceive as the greatest barriers to providing care. The questions were constructed based on the literature review’s identification of issues that school nurses encounter when caring for students with severe allergies. The open-ended questions explored the nurse’s perceptions that were not identified in the Likert – rating scale questions. Narratives in response
to the open-ended questions collected descriptive data. Responses were then coded to find common themes. The frequency of responses was counted.

**Research Methods**

The survey used in the research was semi-structured using research questions that are closed ended, multiple choice and open-ended to identify the school nurse’s perception and the greatest barriers to care. Surveying, even if using open-ended questions, should be methodical and purposeful (Tappen, 2011). The researcher expected different responses with congruent meanings to the open-ended questions so the questions needed to be interpreted the same by each participant.

**Reliability and Validity**

Validity refers to how well a tool measures the phenomenon or measures what it intends to in research. The researcher constructed the survey questions including the Likert-scale type and multiple choice questions based on the results of the researcher’s literature review and the initial research question, demonstrating content validity. The survey tool was designed to assess if the school nurses are facing the same barriers to care cited in the literature and to identify those most frequently reported. Open-ended questions were asked to reveal any unknown or lesser-reported barriers. Reliability measures if a research tool provides stable and consistent results. The researcher used two different methods to test for reliability due to the survey questions being multidimensional and because less than half measured the same element. Factor analysis was used to determine that the questions that were conceptually linked showed similar results. Split-half reliability was used for questions measuring the same element.

**Role and Bias of Researcher**

The researcher has acted in the same role as the participants and realized biases may be present.
The researcher has values and perspectives of the issue in the context of the participants, thus these perspectives cannot be overlooked and should be considered (Tappen, 2011). The analysis was conducted using a quantitative method to provide objective assessment of the data collected. The researcher attempted to put aside personal experiences and feelings during the analysis and summarization to minimize influence and was particularly mindful of potential bias when analyzing the data.

**Data Collection**

The survey tool with an explanation of the research was emailed to each participant’s work email. The survey consisted of 24 questions. The researcher read the surveys twice as they were received to assure nothing was overlooked. Each survey was checked for errors or omissions as they were submitted, catching errors or seeking clarification early in quantitative research is critical (Tappen, 2011) and allowed the researcher to discard suspected invalid data.

The open-ended responses explored the nurse’s perceptions that were not identified in the Likert – rating scale questions. Narratives in response to the open–ended questions collected descriptive data and were coded to find common themes and responses were counted. The researcher used Microsoft Excel® to assist with statistical analysis.

Data management began as soon as the data collection was obtained, with each completed survey being studied upon submission. The researcher was aware that errors may occur that can impede research; examples would be responses to open-ended questions requiring clarification (Tappen, 2011). The data analysis began upon receiving the surveys. Data collection and data analysis may occur simultaneously in research, with more formal analysis occurring after collecting and processing the data (Tappen, 2011).

**Data Analysis**
Basic descriptive statistics were utilized to describe the sample of participants and identify any variables that impacted the nurse’s perceptions. Measures of central tendency that were used included mode, frequencies, and percentages. The survey responses used a five point Likert–scale, responses were assigned numerical value and the mode was reported.

The open-ended question responses were analyzed for themes, and perceptions, noting the frequency of responses; counting is useful for identifying the number of times observations occur (Tappen, 2011). Frequency distribution was utilized to analyze the open-ended questions. Codes were created for the questions. A list of the responses was summarized and the responses tabulated based on any that occur numerous times. The researcher clustered the responses into categories based on frequency. It is helpful to reduce the numbers of categories to keep the data manageable (Tappen, 2011). The researcher paid attention to the frequency of responses, and was mindful of any results that were not anticipated; this is referred to as the stage of discovery (Tappen, 2011).

**Explanation of Research Methods**

Surveys are done to illicit responses which can be tallied and provide meaningful numerical data (Tappen, 2011). Likert- scales are valuable in research, especially when looking at the participant’s perception. A Likert-scale helps participants choose an option that aligns most with their view. Using a scale of Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree can help identify beliefs and attitudes about a phenomenon (Losby & Wetmore, 2012).

**Human Subjects Protection**

**Permissions**

The researcher obtained IRB approval to conduct the research from both Western Governors University and from the school system where the study was being conducted (Appendix B). The researcher completed a web-based course through the National Institutes of
Health (NIH) entitled “Protecting Human Research Participants” and had obtained a certificate of completion (Appendix C). The survey was accessed on-line and was anonymous with minimal risk thus signed consent was not necessary. The researcher did include in an email with an explanation of the research project, the purpose, and also stated participation was voluntary (Appendix D).

**Integrity of Data and Data use**

The researcher used a computer with a password known only to the researcher. The survey provided to participants was accessed on line through a survey company called SurveyMonkey®. The site ensures anonymity of the respondents. The site is password protected and only the researcher had access to the information. Excel® was used to help analyze and sort the data. When the research was completed, all information from both sites was deleted. Results of the research will be provided to the participants and to the school system’s Health Services at their request, with no identifying factors present.

**Summary**

Using a quantitative descriptive design in research helps to establish associations among variables. The researcher hopes that using this method to research the school nurse’s perception regarding barriers to care that were identified can lead to further exploration. The researcher felt with given time constraints and limited resources this was the most feasible and appropriate approach. The researcher believes the results are meaningful and will increase the quality of care for students. It is hoped the research has also identified ways to support the school nurse’s role. School nurses have the opportunity to both ensure safety and also assist the student’s independence by providing an environment that the student can learn to navigate safely, preparing them for a world filled with possible exposure to the allergens they face.
Chapter 4: Findings

Overview

The researcher sent a survey to explore the question, “What does the school nurse perceive as the greatest challenges to providing comprehensive care to the student and their families with severe allergies?” The researcher collected data from twenty-six of the thirty-six school nurses who were sent the surveys. The respondent rate was 68% with a completion rate of 100% from those who responded. Nominal data was compiled by collecting demographic information that included multiple-choice questions. Likert-rating scale questions to determine the most prevalent barriers to care were utilized. Open-ended questions were used to help identify challenges to care not addressed by the Likert-scale. This chapter reports the findings.

Analysis of Data

Each survey question was analyzed using central tendency and by noting the frequency of responses. The ordinal data were then reported by expressing the percentage and the mode. The researcher used SurveyMonkey® to convert the results into bar graphs for better comprehension through visualization. The open-ended questions were categorized into themes and coded by frequency and the researcher used Excel® to create a table. Data that deviated from those categories were described more in narrative form since the researcher believes all information collected for this study was meaningful.

Demographic information

The highest percentages of the participants have been in the role of school nurse for at least six years. Less than twelve percent have been in the role for more than 20 years. The most frequently reported level of education for the participants was Associate degree or Bachelor degree prepared nurses, followed by Diploma nurses. Less than eight percent held Masters
degrees. More than half the participating school nurses had between 26 and 50 students with severe allergies. Only four percent had more than 100 students with severe allergies. When cross tabulating the data and looking at each individual’s response, there appeared to be no correlation with the perspectives and education level of participants or years in practice as school nurses. The participants with a higher amount of students diagnosed with severe allergies had a higher number of students treated for a severe reaction. The three bar graphs below demonstrate these findings.

Figure 1

Years in Nursing

Q1 How many years have you been a school nurse?

Answered: 26  Skipped: 0

![Bar Graphs](image-url)
Figure 2

Education Level

Q2 What is your highest education level?

Answered: 26  Skipped: 0

0% 20% 40% 60% 80% 100%
Diploma Nurse 23.08% 30.77% 38.16% 7.69%
ADN/ASN
BSN
Masters or higher

Figure 3

Number of Students with Severe Allergies

Q3 How many students do you have with a severe allergy at your school?

Answered: 25  Skipped: 1

0% 20% 40% 60% 80% 100%
0-25 36.00% 26-75 56.00% 76-100 4.00% more than 100 4.00%
Nearly 70% of the participants had treated five or less severe reactions while working as school nurses. Less than eight percent have treated more than ten severe reactions. The complete data is provided below.

Figure 4

Number of Reactions Treated

Almost 58% of the participants have a ratio of more than 1,000 students per school nurse. Seventy three percent exceeded the recommended 750 students to nurse ratio. Only three percent have less than 225 students. The graph below demonstrates the student to nurse ratios in the school clinics.
Information regarding Challenges

Data collected in subsequent questions on the survey tool demonstrated the participant’s views of barriers and challenges. Data collected from the multiple choice question comparing the essential aspects of care for students with severe allergies identified educating staff as the greatest challenge with a 50% response rate. The next challenge most frequently reported was preventing an allergic reaction at almost 30%. The least challenging component to care reported was treating an allergic reaction with seven percent responding. Results are provided below.
Questions 13-16 from the survey tool measured each participant’s perception of what causes the greatest challenges using a Likert-scale. The mode, or most common answer for each question was calculated and the percentage of responses for each was also placed on bar graphs. A total of 80.8% of participants believe that field trips present challenges, with the mode or most common answer being 42.3% agreeing. Similar data were collected identifying class parties as creating challenges with 84.6% agreeing, with a mode of 46% strongly agreeing. More than half the participants felt the cafeteria did not pose challenges, with a mode of 46% disagreeing and 7.6% strongly disagreeing with the statement. Exactly half of the nurses felt specials did not pose additional challenges. The analyzed data are presented below.
Figure 7

Field Trips

Q13 Field trips create challenges when providing care for students with severe allergies.

Answered: 26  Skipped: 0

Figure 8

Class Parties

Q14 Class parties create challenges when providing care for students with severe allergies.

Answered: 26  Skipped: 0
SCHOOL NURSES PERCEPTION OF SEVERE ALLERGIES

Figure 9

Specialists

Q15 Specialists (P.E., Art, FLES) present challenges when providing care for students with severe allergies.

Answered: 26  Skipped: 0

Figure 10

Cafeteria

Q16 The cafeteria (including staff and/or lunch time procedures) presents challenges when providing care for students with severe allergies.

Answered: 26  Skipped: 0
Trainings

Data collected from questions 8-10 and question 20 on the survey tool using the Likert-rating scale provided data regarding trainings. The nurses reported feeling confident training school staff with 85% either strongly agreeing or agreeing and the most common response being agreeing with a mode of 50%. The participants reported that 68% believed training for the education staff was sufficient, with a mode of 56%. Twenty percent disagreed that the training for staff provided by the nurses was sufficient. Ninety-six percent of the participants feel that the training for school nurses regarding care is sufficient with a mode of 58% agreeing and 38% strongly agreed. A total of 62% of nurses felt that staff comprehended the critical nature of severe allergies, with a mode of 50% agreeing. Eleven percent strongly agreed. Thirty-eight percent felt their staff did not comprehend the critical nature. The following graphs represent these findings.

Figure 11
Training School Staff
Figure 12

Sufficiency of Training Education Staff

**Q9** Training provided for the EDUCATION STAFF regarding caring for students with severe allergies is sufficient.

Answered: 25  Skipped: 1

![Bar chart showing responses to Q9 with 56.00% Strongly Agree, 20.00% Disagree, 12.00% Neutral, 12.00% Agree, and 0% Strongly Disagree.](image)

Figure 13

Sufficiency of School Nurses Training

**Q10** Training provided for SCHOOL NURSES regarding caring for students with severe allergies is sufficient.

Answered: 26  Skipped: 0

![Bar chart showing responses to Q10 with 57.69% Agree, 38.46% Strongly Agree, and 3.85% Strongly Disagree.](image)
Collaboration

Questions 7, and 17-19 yielded data regarding collaboration with the school nurse, parents and school community. The participant’s responses showed 78% feel there is a team approach utilized in providing care including teachers, nurses, parents and administrators. The mode was 53.85%, with most participants strongly agreeing with the statement. Sixty percent of the nurses agreed there is collaboration with parents and that parents effectively communicated, the mode being 44% with simply agreeing. Eighty-eight percent of the nurses believe they have effective collaboration with teachers, with the mode being 65% agreeing and the remaining 23% strongly agreeing. Almost 12% were neutral and no participant disagreed. Eighty-four percent of participants report collaboration with the guidance counselors, with 30% strongly agreeing. Seven percent strongly disagreed with the statement. The following bar graphs depict the findings.

**Figure 14**

Staff comprehending the Critical Nature of Severe Allergies

Q20 The staff at your school comprehends the critical nature of severe allergies.

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>11.54%</td>
</tr>
<tr>
<td>Disagree</td>
<td>26.92%</td>
</tr>
<tr>
<td>Neutral</td>
<td>50.00%</td>
</tr>
<tr>
<td>Agree</td>
<td>11.54%</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>0%</td>
</tr>
</tbody>
</table>

Answered: 25  Skipped: 0
Figure 15

Team Approach

Q7 A team approach is always used when caring for students with severe allergies that includes teacher, nurse, parents, and administration.

Answered: 26  Skipped: 0

Figure 16

Parent collaboration

Q17 Parents of students with severe allergies collaborate and communicate effectively with you.

Answered: 25  Skipped: 1
Figure 17

Collaboration with Teachers

Q18 There is effective collaboration between you and teachers regarding care of students with severe allergies.

Answered: 26   Skipped: 0

Figure 18

Collaboration with Guidance Counselors

Q19 You collaborate with guidance counselors to support students with severe allergies.

Answered: 26   Skipped: 0
Policies

Questions 11, 12, 21 and 22 provided data regarding policies and guidelines for school nurses caring for students with severe allergies. Sixty-one percent of participants felt staff easily understands the guidelines and policies the school system has in place but 46% felt they were not always adhered to. Sixty-one percent of the school nurse participants believe there should be standard Nation-wide laws and policies in place. An overwhelming 100% of survey participants believe there should be access to stock Epinephrine in all schools, with the mode being 80.7% strongly agreeing. The following bar graphs break down the information.

Figure 19
Policies Understood by School Staff

**Q11 The policy and guidelines for students with severe allergies are easily understood by your school’s staff.**

Answered: 26  Skipped: 0
Figure 20

Policies Adhered to by Staff

Q12 The policy and guidelines concerning severe allergies are always adhered to by your school's staff.

Answered: 26  Skipped: 0

Figure 21

Standard Policies Nationally

Q21 You believe there should be standard laws and policies nationally regarding the care of students with food allergies

Answered: 26  Skipped: 8
Open–Ended Questions

The open-ended questions collected data that identified additional perspectives on barriers to care. The data were categorized into themes, and the frequencies of responses were counted. The first question was, “Please identify the greatest source of stress or challenge when caring for students with severe allergies.” The data introduced the perspective that parents create the most stress according to nine of the participants. The participants identified parents not providing proper medication and/or care plans as the most frequent concern, with 66% sharing this. The next most prevalent source of stress was related to teacher or staff non-compliance. Eighty-six percent of the school nurse participants reported having food in the classroom as the greatest challenge. Four participants shared students create stress by not taking their allergies seriously or not sharing symptoms because of fear of receiving an Epinephrine injection.
Additional reported stressors were related to unknown allergens; having other students in the clinic at the same time as students with allergies; identifying symptoms due to differing manifestations and that administrators, school staff and other student’s parents do not take allergies seriously. The following Table 1 demonstrates these findings. The statements included were taken as direct quotes from the survey.

Table 1

Source of Stress

<table>
<thead>
<tr>
<th>Greatest Source of Stress</th>
<th>Response #</th>
<th>Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents</td>
<td>9</td>
<td>Getting parents to bring in an Epi-pen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parents that do not provide Epi-pens for their children</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parents who do not provide meds or md orders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parents not being reasonable with their request or not telling the school or not bringing in the Epi-pens when requested</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parents do not communicate w/me or provide care plans</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parents not adhering to policies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parents not taking the severe allergy seriously.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not being aware that a student has a severe allergy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Communication with some parents</td>
</tr>
<tr>
<td>Food in Classrooms/Teacher compliance</td>
<td>7</td>
<td>Staff feeding the students in the classroom</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Outside food introduced in the classroom</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food in the classroom</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food in classroom</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Disregard for safety of students with allergies by staff or parents providing &quot;treats&quot; in school, having plants, flowers, and animals in school. Often feel that parents of allergy students and students and I are the only safety net between safety and disaster.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Teachers not following procedures they are taught, packing up for field trips, parents not taking the severe allergy seriously.</td>
</tr>
</tbody>
</table>

Table 1

Source of Stress
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Students</strong></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Teachers who feed their students food and disregard the potential for an allergic reaction</td>
</tr>
<tr>
<td></td>
<td>The teenage mind. They feel indestructible, want immediate gratification, lack impulse control; are egocentric.</td>
</tr>
<tr>
<td></td>
<td>Students not taking it seriously</td>
</tr>
<tr>
<td></td>
<td>Making sure that students who carry their own Epi pens have them when they go on Field Trips.</td>
</tr>
<tr>
<td></td>
<td>Students are not always honest with symptoms because they are afraid of the needle from the Epi pen.</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>My greatest source of stress would be initially setting up the line of communication describing the student's needs throughout the school and assuring the student's safe care from the start of their being a student here.</td>
</tr>
<tr>
<td></td>
<td>How a student presents with symptoms.</td>
</tr>
<tr>
<td></td>
<td>Having other students in the clinic</td>
</tr>
<tr>
<td></td>
<td>Unknown contaminations</td>
</tr>
<tr>
<td></td>
<td>Administrators, staff members and parents at the school who do not take severe allergies seriously.</td>
</tr>
</tbody>
</table>

Question 2 asked for the participants to “Identify one area where you would benefit from having more support when providing care to students with allergies.” Eight cited wanting more support from parents, one felt parents need to be prepared even when confident their student can use allergen avoidance to prevent a reaction. One shared parents of the other students need to be more supportive; the researcher assumes this refers to the parents of non allergy students. Six participants desire more support in the form of policies and guidelines. Sixty-six percent want policies regarding food in the classrooms to be established and adhered to. One participant shared the need for guidelines that support the nurse in using their critical thinking and assessment skills. Five participants cited needing more support from the administration, one specifically stating to help with adherence to policies. Three participants felt they received the necessary support already. The following table shows the data.
Table 2
Support Needed

<table>
<thead>
<tr>
<th>Support Needed</th>
<th>Response #’s</th>
<th>Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parents</strong></td>
<td>8</td>
<td>Some parents either underestimate the danger of severe food allergies or over describe their child's sensitivity to foods. The concern is more for the child who has been identified as a (example) &quot;Tree nut&quot; allergy but knows how to avoid these foods and does not need any medicine available at school. This is impressive at the elementary school level including kg students. My question is are they or aren't they and why not be prepared for an emergency should it arise. Of course, it is ultimately the legal choice of the parent.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parent follow up/updating of allergy info as it changes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parents completing procedures and notifying school of allergy problem</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other student's parents.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parents encouraging their child to self-advocate.</td>
</tr>
<tr>
<td><strong>Administration</strong></td>
<td>5</td>
<td>Administration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Administration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Administration- policies/guidelines are not effective if not adhered to as seems to be the case at this time.</td>
</tr>
<tr>
<td><strong>Policies/Guidelines</strong></td>
<td>6</td>
<td>Clear standard policies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Absolutely no outside food</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Less food brought in for class parties</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stricter guidelines with appropriate grade levels about eating in classrooms with across the board and alerting clinic with parties.</td>
</tr>
</tbody>
</table>
The guidelines need to have more room for Nurse’s experience and assessments to make decisions. Dr. Woods has said to one of my parents that he does not want the asthmatic/food allergy student to get an Epi Pen every time she is wheezing. There is too much of admin covering themselves liability-wise putting nurses in an uncomfortable position ie, no Epi Pens after 3pm, no stock Epi pensto be given to staff…

Teachers would not provide food rewards in the classrooms.

Policies set that every school in our district would have to follow.

**Other**

| 1 | Having someone to help with the other students in the clinic, allowing me to focus completely on the student w/the severe allergy. |

**No needs**

| 3 | None. LCPS provides outstanding training. I take that training and knowledge and education my staff and students. The policies in place work. |

|  | I feel I get excellent support with my administration and some parents get it and some don't |

|  | I feel that I am adequately educated by my administration as well as parents. |

**Results and Interpretation**

The findings of the data analysis demonstrate that half of the participants believed educating staff to be their greatest challenge, followed by preventing a reaction at 26.9%. Surprisingly, in addition to these findings, nearly 60% believed the trainings for staff are effective, and 96% believe the training for the nurses are effective. Literature had revealed that nurses might be competently trained on anaphylaxis management but not consistently equipped on how best to train others (Clarke, 2010). This seems consistent with the data.

Field trip and class parties presented the next most prevalent challenges, and the open-ended questions helped clarify that it may be because policies regarding these are not always adhered to. The open-ended question’s findings demonstrate that 40% of participants feel parents create challenges when
they are non-compliant with providing medication and care plans. Almost 30% feel that food in the classroom created challenges; the data correlated with classroom parties providing stress.

Data showed that more than half the participants felt teamwork and collaboration is present at their schools. A missing piece of the team appears to be students, as 4 reported in the open-ended questions when participants shared students do not always accept responsibility for their allergies.

Sixty-five percent of participants feel there should be standard Nation-wide policies. The data generated from the open-ended questions showed policy and guidelines as the second most prevalent area where the nurses lack support. One hundred percent of school nurses sampled believe there should be stock Epinephrine in every school, which was cited in the literature review as best practice.

Summary

A survey tool was used to answer the research question in addition to what the literature review had identified as known barriers to optimal care. These included a lack of teamwork/collaboration, training of staff, lack of policies and the comprehensive nature of care. Open-ended questions were asked to determine any additional phenomena. The data were analyzed using central tendency and the results reported in percentages of the participant’s responses.

The findings were consistent with the literature review with a few unexpected barriers to care identified, such as parents and the students themselves creating challenges. The care provided for students with severe allergies is comprehensive and is dependent on variables. An interesting finding from the demographic information was that 73% of the school nurses surveyed have more than the recommended 750 students to nurse ratio. Two separate responses to the open-ended questions may indicate the burden of this; one participant stated having other students in the clinic while caring for student’s with allergies creates stress, and the other cited
needing more support if there is another student in the clinic at the same time. The next chapter will discuss the implications of the identified challenges and offer suggestions.
Chapter 5: Discussion and Conclusions

Introduction

A quantitative study was done to explore the school nurse’s perception of caring for students with severe allergies. The purpose of the study was to identify barriers and increase the quality of care provided for the student; and to enhance the school experience for all vested parties including the family, school nurse and staff. This final chapter discusses the findings, the implications and the recommendations that resulted from the research. Limitations and suggestions for future study are also included. The researcher provides a reflection on the experience of pursuing a Master Degree of Science in Nursing Education at Western Governors University.

Discussion

Research Question Findings

The research question focused on the school nurse’s experiences and what they see as their greatest challenges. The study was guided by the research question, “What does the school nurse perceive as the greatest challenges to providing comprehensive care to the student and their families with severe allergies?” A survey tool was sent to all nurses in the local public school system. The responses generated data consistent with the literature.

The findings demonstrated the greatest challenge was in regards to educating staff, even when responses showed the nurses felt the education provided was sufficient. Field trips were identified as the next most prevalent challenge, followed by food in classrooms, usually during a class party. Preventing a reaction was a cause of some concern, and may be the reason food in the classroom had a large response. Surprisingly, the least challenging aspect of care was
treating a reaction, showing both confidence and competence in the school nurse’s clinical skills.

The Likert-scale responses showed there might be collaboration and a team approach present, however the open-ended questions displayed that communication is not always effective. The school nurses who were surveyed shared that parents create stress by not communicating changes in student’s health status; some have not even communicated there is an existing allergy. Parents do not always provide medication and care plans. The nurses further shared that the support they most need is from the parents, followed by administration supporting existing policies. The lack of adherence to policies regarding food in the classrooms creates challenges and compromises the student’s safety.

The student-nurse ratio was cited in the literature as an obstacle, especially in addition to the comprehensive care that is needed with severe allergies. The open-ended question responses displayed this concern with two nurses reporting stress when other students are present in the clinic and one stating the need for more support when additional students are present while they are providing care to a student with allergies. Only 27 percent of the nurses surveyed had the recommended student to nurse ratio of 750:1. The remaining 73 percent far exceeded what has been shown to be best practice.

There were two areas of care where the research demonstrated this particular school system has excelled and deserves mention. One hundred percent of the nurses surveyed felt there should be stock epinephrine available in every school, something the Supervisor of Health Services worked fervently to achieve. The second was the researcher surprisingly learned that the cafeteria caused the least amount of challenge for the school nurses. This is where exposure to food allergens would seem most likely; but Food Services and the Resource Nurses have done an excellent job on training cafeteria staff on proper protocol and safety measures.
Implications

Strengths

Strength of the research was demonstrated with triangulation; results were supported by similar findings noted in the literature, the open-ended question responses and the Likert-rating scale responses. Another area of strength was that all registered nurses in the school system’s clinics were given an opportunity to participate; this type of sampling is thought to be the best way to ensure all individuals in a defined population are represented in a sample (Gay, 1996). The response rate to the online survey was 68%, which is considered high. The nurses who participated in the survey share the common goal of providing the best possible care to their students. The survey maintained anonymity and therefore there was no reason for any participant to not have answered the questions honestly.

Weaknesses

The survey was not constructed with questions that were reversed with one another, which limited cross correlation. Cronbach’s - Alpha analysis was used on some questions and factor analysis on others. The researcher has worked in the same capacity as the nurses surveyed, although biases were acknowledged and the researcher remained mindful of any, analysis of data could have been influenced by the researcher’s opinions.

Limitations

The researcher surveyed only one school system’s nurses so the results may not be applicable on a larger scale or applicable to additional school systems, even though the data correlated with the literature and previous studies. The 68% response rate was high for an online survey, but it included only 26 participants. There was no differentiation in the ages of the students the school nurses cared for, so whether it was elementary, middle or high school was not
factored into the demographics. Literature demonstrated that there were psychosocial implications for students and their families which was not addressed fully in the survey or included in the additional burden to school nurses.

**Recommendations**

**Solutions**

Half the nurses reported training the staff on severe allergies as the greatest challenge. The researcher proposes a train the trainer course for the school nurses. Literature showed that nurses might be extremely competent in the care and knowledge of allergies but not necessarily in providing trainings to others. Creating a standard teaching tool using evidence-based practice may assist in alleviating any stress and ensure all staff is competent and aware of the same protocols. The National Association of School Nurses has an available program on-line called “Get Trained ®” that offers a tool to assist with training staff and resources on anaphylactic emergencies (NASN, 2014).

Field trips and class parties, where there seems to be a less controlled environment and more risk of exposure creates concern for school nurses. The lack of administration’s support and enforcement of the guidelines or even lack policies that allow food in the classroom need to be addressed and established. The school system’s Health Services can provide in-services to the administration staff that identify the policies and stress the risks of ignoring them. School nurses can then integrate the policies into their staff trainings, with confidence they will be supported by their administration. Food Services trainings can serve as an example when designing the in-services since they appeared to demonstrate best practice.

The psychological implications for students and families can be addressed by collaboration with guidance counselors. The researcher has implemented class visits with the
school guidance counselor and has read age appropriate books about severe allergies to classes upon request. The researcher and school guidance counselor are working to form a group activity to support students. This is also with the hope to diminish bullying from other students by helping non-allergic students understand better about the implications of severe allergies. Responses to the open-ended questions showed the need for students to take responsibility for their allergies, it is hoped the activity may facilitate this as well. Other school nurses may adopt a similar practice.

Communication with parents is a more difficult area to address. Literature demonstrated the stress faced by families and the need for reassurance; school nurses have the opportunity and responsibility to provide for this need. The school nurse can create a supportive and encouraging environment. Having consistent adhered to standard policies in place will alleviate fears. The data demonstrated there is sometimes a lack of openness from parents. In response to this lack of communication from parents, periodic reminders from the clinic asking for any health updates may be helpful; however research shows that school nurses are already taxed with their complex role and the nurses surveyed have very high student to nurse ratios. Adding to their tasks may create more stress. This is an area where further study should be explored. The high student to nurse ratio noted in the data is another area that requires attention. The researcher understands it is due to budget constraints and may not be considered a priority, yet it is worthy of future pursuance. There is an opportunity for the school nurses to act as change agents and advocate for safer ratios and policies on both a local and national level.

**Study Improvement**

The study could have included two or more school systems to help ensure the reliability of the results. The researcher could construct the questions in the survey differently, with some
reversed to allow for greater validity. A qualitative research approach may have captured more in-depth data, or expanded on the responses to the open-ended questions. The researcher has also pondered if leaving the survey open for a full two weeks would have provided a higher response rate.

**Future Research Opportunities**

The researcher feels there are many areas that deserve future study. As previously noted, the psychosocial implications are many and there was limited research discovered during the literature review. Additional studies are warranted, especially as the prevalence increases. Communication with parents of students with severe allergies, and even non-allergy parents cause a great deal of stress as found in the open-ended question responses. A study that defines best practices would be beneficial. Severe allergies are increasing while the school nurses role is expanding. The school nurse would benefit from support in all areas, especially in providing comprehensive care to students with severe allergies.

**Master Degree Experience**

The decision to go back to school while working full time and raising a family is a difficult one. There are a myriad of excuses to justify not doing it. I am so glad I found Western Governors University. The program addressed each of my concerns and facilitated a learning experience that was beyond anything I could imagine. WGU left no room for excuses.

The competency-based education I received utilized my existing knowledge and experience while filling the vast void of information I was seeking. The skills I learned from the course of studies were valuable and applicable to every area of my profession and to my future goals. The courses of studies were always challenging. The course mentors presented the information in a way that made learning both exciting and practical. The tasks required hard
work, but each left me with a sense of satisfaction and accomplishment. The task revisions and feedback from the evaluators were a key part of the learning process as well.

I did not realize how precious it was be able to move at my own pace until I was diagnosed with cancer during my master’s program. I was determined to not let cancer stop my progress, but when I was put in isolation without access to a computer, I was unable to finish a course. My student mentor helped me see that taking a term break was not giving up but a way to ensure my success. Which brings me to one of the best aspects of my experience, my student mentor.

Having a student mentor is similar to having a guardian angel. She kept me on track and motivated. She was always there to provide not only encouragement but also direction and appropriate resources. Even during my term break, my student mentor called weekly.

Pursuing my masters at WGU not only helped fulfill my education and professional goals as originally planned, but also gave me hope that I would have a future. This was far better than any medical intervention.

Skills and Experience that can be applied to current work environment

There was not a course that did not impact my nursing practice. I am even using statistics frequently. I am more mindful of utilizing evidence-based practice. I use the skills I learned to research and discern the validity and scholarship of articles. I am constantly conducting literature reviews to find existing research to guide my practice. The most amazing impact has been regarding my dedication to my profession and the obligation I now feel to it. My experience has renewed my commitment to being the best nurse I can be and inspiring the same in others.

An example of an application of my acquired knowledge was realized at a recent interview I had. I learned in my Education Specialist course of study how to construct interview
questions for new faculty and I found myself critiquing the interviewers questions after the process. I felt more confident while interviewing as well and better prepared for the role I was seeking.

Throughout the capstone experience I applied the valuable information I now possess and honed my skills. In a previous task I had developed a power point and a curriculum for training nurses on severe allergies and will present that to my school system’s Supervisor of Health Services and offer its use as a training aid for the school nurses to use when training their staff. This was decided after collecting my data and discovering this was a challenge for the school nurses in their clinical settings. I am grateful for WGU and for all I have gained as a result of my experience. WGU has given me the encouragement and desire to seek a terminal degree and has equipped me to succeed.
References


Retrieved from www.kidswithfoodallergies.org/resources


*The journal of school nursing, 20* (5), 268-278


Appendix A: Survey Tool

Severe Allergies

Multiple Choice

1. How many years have you been a school nurse?
   - 1-5 years
   - 6-10 years
   - 10-20 years
   - more than 20 years

2. What is your highest education level?
   - Diploma Nurse
   - ADN/ASN
   - BSN
   - Masters or higher

3. How many students do you have with a severe allergy at your school?
   - 0-25
   - 26-75
   - 76-100
   - more than 100

4. How many severe reactions have you treated while a school nurse?
   - 0-5
   - 6-10
   - more than 10

5. What is the current student to nurse ratio at your school?
   - less than 225 students per nurse
   - 225-750 students per nurse
   - 751-1000 students per nurse

1 of 2
Severe Allergies

Please choose how much you agree with each statement

7. A team approach is always used when caring for students with severe allergies that includes teacher, nurse, parents, and administration.
   - Strongly Disagree
   - Disagree
   - Neutral
   - Agree
   - Strongly Agree

8. You feel confident training school staff on caring for students with severe allergies, including assessing and responding to anaphylaxis.
   - Strongly Disagree
   - Disagree
   - Neutral
   - Agree
   - Strongly Agree

9. Training provided for the EDUCATION STAFF regarding caring for students with severe allergies is sufficient.
   - Strongly Disagree
   - Disagree
   - Neutral
   - Agree
   - Strongly Agree

10. Training provided for SCHOOL NURSES regarding caring for students with severe allergies is sufficient.
    - Strongly Disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly Agree

11. The policy and guidelines for students with severe allergies are easily understood by your school’s staff.
    - Strongly Disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly Agree

12. The policy and guidelines concerning severe allergies are always adhered to by your school’s staff.
    - Strongly Disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly Agree
13. Field trips create challenges when providing care for students with severe allergies.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

14. Class parties create challenges when providing care for students with severe allergies.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

15. Specialists (P.E., Art, FLES) present challenges when providing care for students with severe allergies.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

16. The cafeteria (including staff and/or lunch time procedures) presents challenges when providing care for students with severe allergies.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

17. Parents of students with severe allergies collaborate and communicate effectively with you.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

18. There is effective collaboration between you and teachers regarding care of students with severe allergies.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

19. You collaborate with guidance counselors to support students with severe allergies.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>
Appendix B: Approval Letter

February 5, 2014
Western Governors University
Institutional Review Board

Dear Members of the Institutional Review Board,

The purpose of this letter is to grant Alyson Kreitzman B.S.N., R.N., a student at Western Governors University (WGU), permission to conduct research at Loudoun County Public Schools (LCPS) health clinics. The Capstone project, Exploration of School Nurses’ Perceptions of Caring for Students with Severe Allergies, entails asking nurses from LCPS to voluntarily complete surveys online. The goal of this quantitative research project is to capture universal perceptions that may influence the care provided to the students in hopes of increasing the quality of care and the quality of the school experience for both students and their families, and possibly identifying and addressing any needs of the nurse that may arise. LCPS Student Health Services was selected because they are the employer of the researcher and serve a high number of students with severe allergies.

I understand that the Capstone project research will take place from February 17, 2014 to April 1, 2014.

I understand Alyson Kreitzman B.S.N., R.N. will receive informed consent from all research participants, that any data collected by Alyson Kreitzman B.S.N., R.N. will be kept confidential, and that Alyson Kreitzman B.S.N., R.N. will receive WGU IRB-approval before she recruits research participants or collects data.

Alyson Kreitzman B.S.N., R.N. will share the study results when completed with LCPS Student Health Services, at their request, while maintaining confidentiality of the participants; and the researcher hopes it may provide valuable insight.

As the Student Health Services Supervisor for LCPS, authorized to act on behalf of LCPS Student Health Services, I do hereby grant permission for Alyson Kreitzman B.S.N., R.N. to conduct research for her Capstone project at LCPS health clinics.

Sincerely,

Nancy Markley B.S.N., R.N., N.C.S.N
Supervisor of Student Health Services
Loudoun County Public Schools
21000 Education Court
Ashburn, Virginia 20148
Appendix C: Protection of Human Subjects Training Certificate

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that Alyson Kreitzman successfully completed the NIH Web-based training course “Protecting Human Research Participants”.

Date of completion: 02/09/2014

Certification Number: 1396481
Appendix D: Invitation Email

To: [Email]
From: [Email]
Subject: Survey
Body: You are invited to participate in a research study being conducted by Alyson Kreitzman B.S.N. R.N., a master’s degree candidate at Western Governors University and a co-worker at Loudoun County Public Schools. The research project will be done to explore the perceptions of school nurses who care for students with severe allergies.

The purpose of the study is to help increase the quality of care for students with severe allergies as well as positively influence the student and families school experience. It is also hoped that valuable information may emerge that helps identify areas where more support can be offered to school nurses.

The researcher is using a quantitative research design. An anonymous survey will be completed online regarding experiences and observations of caring for these students. The survey should take no more than 15 minutes. Participation is completely voluntary. If you decide to participate, please complete the survey and submit before May 14, 2014.

Thank you so much for your time and consideration. If there are any questions, or concerns, please notify the researcher, Alyson Kreitzman B.S.N. R.N. Phone number: [Email: Alyson.Kreitzman@lcps.org]