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Development and implementation of a school nurse staffing model: a policy change proposal.

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Development and implementation of a staffing acuity model for school nurses:

A policy change proposal

by

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Dedication

I would like to dedicate this policy change proposal to my husband, Clay Champion. Thank you for learning more about school nursing in the past two years than you ever thought possible. I am so thankful that you push me to use my voice to advocate for others, and dream big, while simultaneously sacrificing our precious time together in order to see those dreams through.

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To Dr. Sara Robertson, my committee chair, and dean of the DNP program, thank you. I appreciate your guidance, feedback, ability to keep not only myself, but all students, steadfast on our pursuit of our doctorate. Thank you for showing me the importance of advocacy for my profession, networking and helping to make University of Louisville School of Nursing DNP program what it is. I am proud to earn my degree from here.

To Dr. Eva Stone, thank you for introducing me to the world of school nursing. Thank you for sharing your passion for advocacy of students. You have shown me the importance of leadership as a doctoral prepared nurse. I hope to utilize my voice to advocate for real change, just as you do every day.

Abstract

Background: School nurses play a vital role in the success of students. Having a school nurse is associated with improved attendance, management of chronic student conditions, and graduation rates. Public schools in Kentucky, and across the nation, face huge budget issues, and often, school nurse jobs are cut. With limited staff, school districts must find efficient ways to staff school nurses to meet student needs. The National Association of School Nurses (NASN) argue for staffing school nurses based on social determinants of health, along with medical complexity of students. In 2021, only one staffing model had been published with measurable outcomes demonstrating school nurse's relationship to student outcomes.

Purpose: The purpose of this policy change proposal was to introduce a published staffing model based on social determinants of health along with medical complexity of students, to school nurses in Kentucky.

Methods: A descriptive and qualitative design was used for this policy change proposal. A recommendation of using a staffing model focused on SDOH was presented to school nursing staff via a pre-recorded online PowerPoint presentation. An online survey consisting of four two-part questions was given at the end of the presentation.

Results: A SWOT analysis was completed using an online survey. Six out of ten participants completed the survey. Key findings related to opportunities for change, barriers to implementation, and threats for uptake of model were placed in a 2x2 grid.

Discussion: Themes that emerged for strengths, weakness, opportunities and threats aligned with current literature. Issues with data collection, need for models generalizable, budgets, and the

Covid-19 Pandemic were the key issues. Use of this SWOT analysis will be used to revise policy change proposal.

Keywords: school nursing; social determinants of health; school nurse workload; school nurse caseload; school nurse ratios; student outcomes.

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Development and implementation of a staffing acuity model for school nurses: A policy change proposal

School nurses are vital to the success of children in the public school system (American Academy of Pediatrics, 2016). They are often the only healthcare professional in schools and play a pivotal role in helping promote health and well-being of students (National Association of School Nurses, 2017). Having a nurse present in public schools' results in higher graduation rates, lower absenteeism, improved case management, and increased self-efficacy of students with chronic health problems. As budget constraints continue to plaque public schools' systems, having a school nurse is viewed as non-essential, and nurses are routinely cut from school systems. At the same time, the children in these school systems continue to face higher levels of chronic health conditions along with increased social determinants of health. In the United States, there are currently 51 million children (about twice the population of Texas) in public schools and 132,300 school nurses (Willgerodt, Brock, & Maughan, 2018). Healthy People 2020 advocated for a school nurse ratio of 1:750, but the National Association of School Nurses (NASN), acknowledging that there is no sufficient evidence supporting this practice (2015), urged for a multifactorial approach that encompass social determinants of health along with medical complexity of students. To efficiently provide care to the student population a reorganization of current school nurse staffing should be explored. Increasing amounts of research have shown that addressing the social determinants of health of the students along with medical acuity, as opposed to staffing based off medical acuity alone, should be used for achieving higher care for a larger percentage of students. (Schroeder, Malone, McCabe, & Lipman, 2018).

Background

School-aged children spend seven hours a day, 180 days (about 6 months) a year, in school. Outside their home, most of their time is at school (Centers for Disease Control and Prevention, 2019). A school nurse has a significant opportunity to provide access to health care and services to students. As the US health care and education system have evolved, so have the students. Students today suffer from increasingly higher levels of asthma, diabetes, and obesity along with increased barriers to learning such as mental health disruptions, inadequate access to healthcare, food insecurity, and chronic absenteeism. (Schroeder, Malone, McCabe, & Lipman, 2018). Coupled with federal laws ensuring the right to public schools for children with disabilities and complex health conditions (Rehabilitation Act of 1973; Individuals with Disability Education Improvement Act of 2004) the healthcare of students has become more intensive.

Definition of Pertinent variables

Role of the School nurse

School nursing is rooted deeply in public health principles (Bergren, 2017). It began with implementation of proper hygiene and disease prevention as a way to help reduce absenteeism of children. In present day, school nursing remains a vital part of public health nursing, but has expanded beyond disease prevention (Bergren, 2017). Defining the role of a school nurse is complex because the duties are comprehensive, though at its core, the school nurse promotes and supports the health and wellbeing of the student through individualized and population focused care (Bergren, 2017) so that children can participate fully in their academic education.

School Nurse Workload

School nurse workload/caseload was officially updated in a position statement from NASN replacing the term caseload with workload. The concept of caseload, the standard of

practice since the 1970s, is based off student and nurse ratios (National Association of School Nurses, 2015). A workload model is meant to encompass the caseload ratio, but also considers the unique and complex characteristics of the student population. A concept analysis of the term workload proposed a comprehensive definition, "nursing workload is the amount of time and care that a nurse can devote (directly and indirectly), towards patients, workplace, and professional development (Alghamdi, 2016, p. 455)." The Centers for Disease Control and Prevention (CDC), NASN, and American Academy of Pediatrics (AAP), have widely recommended the ratio of 1:750, but NASN acknowledge that there is no sufficient evidence supporting this practice (National Association of School Nurses, 2015). Research devoted to determining workload of nurses in all settings exists, with more literature existing for acute care. Minimal amounts of literature can be found for school nursing workload that accounts for multifactorial variables recommended by NASN (i.e. acuity, safety, SDOH, safe ratios). Currently, in the state of Kentucky there is no standardized policy in place for how workload/staffing should be staffed. the school districts that utilize nurses focus the majority of their attention on chronic medical conditions and medical procedures.

Social Determinants of Health

SDOH are the "conditions in which people are born, grow, live, work and age (Schroeder et al., 2018)." Healthy People 2020, group SDOH into five categories; economic stability, education, social and community context, health and health care, and neighborhood and built environment. SDOH examples include, poverty, lack to access of healthcare, violence in the home, lack of access to education, food scarcity, lack of proper housing, unsafe neighborhoods, language barriers, access to parks and playgrounds, and culture (Schroeder et al., 2018).

SDOH have become a critical issue in healthcare. Healthy People 2020 define SDOH as an objective with the goal of "creating social and physical environments that promote good health for all (Centers for Disease Control and Prevention, 2018)." Despite acknowledgment of SDOH, data suggests that the US population remains disproportionally affected by SDOH (Singh et al., 2017). Individuals who are minorities, live in rural environments, or live-in poverty have higher incidences of chronic diseases, higher mortality and morbidity rates, and lower life expectancy (Singh et al., 2017). Asthma, the most chronic condition affecting school aged children, has been shown to be 56% more likely to occur when the child lives in poverty compared to those children who are above the poverty line, and children who live in unsafe neighborhood or inadequate housing are 32% more likely to have asthma than those with safe housing (Singh et al., 2017). SDOH account for 50% of an individual's health (Maughan, 2020). Investing in early childhood education and health prevention can help combat lifelong education and medical implications caused by SDOH (Singh et al., 2017).

Significance of problem

Kentucky currently ranks 36th and 44th in education and healthcare (Kentucky Cabinet for Health & Family Resources, 2017). 18.5% of Kentuckians live below poverty, the national average is 14.3% . The Kentucky Cabinet for Health and Family resources found that 25% of children live in poverty, and 20% of children face food insecurity (2017). This echos data from the KDE that shows that 76% of students receive free or reduced lunches (2021). Kentuckians with lower educational attainment (high school completion or less) and lower annual income levels ($25,000/annually) suffer from higher levels of diabetes, coronary artery disease, poor mental health days, and are more likely to have poor health habits (Kentucky Cabinet for Health & Family Services, 2017) . Kentucky is also below national average in amount and access to

primary care providers, while suffering high ranks of deaths related to cancer, preventable deaths, and preventable hospital admissions (Kentucky Cabinet for Health & Family Services, 2017). In health habits, Kentucky currently ranks 49th for smoking, with above national averages in maternal smoking and children exposed to second-hand smoke (Kentucky Youth Advocates, 2021).

Kentucky currently has no mandate requiring the presence of a school nurse. As recent as 2019, one third of Kentucky Schools do not employ a school nurse (Kentucky Department of Education, 2021). Of the 173 Kentucky school districts, 48% exceed the recommended ratio from the APA and NASN, with 46 school districts having no nurse in the district (Kentucky Department of Education). For the 2019-2020 school year, there were 1017 nurses in Kentucky schools (862 employed; 155 contract nurses) and 720,532 students (Kentucky Department of Education, 2021). Data for the 2018-2019 school year showed that there were 122,632 students with documented chronic health conditions (out of 649,785 students) and a total of 2,258,158 health visits to the nurse (Kentucky Department of Education, 2021).

Completion of needs assessment for Kentucky public school nurses is widely documented. The Kentucky Nurses Association (KNA) placed legislative priority in having a healthcare provider in every public school in Kentucky (School Nurse in Every School, All day, Every Day). As of 2021, there is no bill for the Kentucky General Assembly addressing school nursing (Kentucky Nurses Association, 2021). Currently, federal funding granted via Coronavirus Aid, Relief, and Economic Security Act (CARES) and the Elementary and Secondary Schools Emergency Relief Funds (ESSER II) is being promoted by KNA for the hiring of school nurses in every school, but is not mandatory, meaning districts who seek CARES and ESSER II funding can utilize the funding for after school programs, summer school

programs, student school supplies, and many other services aimed to keep kids in school and learning (Kentucky Nurses Association, 2021). Funding though CARES and ESSER II, regardless of how it is utilized, is only available through 2023.

To complete the mission of student health services in the KDE (2021) and, "support the districts as they support the student health needs," while also meeting the goals of the Cabinet of Health and Family Resources (2017) and the Kentucky Department of Public Health (2021), Kentuckians are urged to advocate for health professionals in schools while focusing on SDOH and equity of students.

Addressing the shortage of school nurses by using a staffing model based on SDOH is a complex issue. It involves understanding the role and scope of the school nurse set by the state guidelines, determining what the nursing workload includes for each school within the system, and using demographic data to help identify those students who face SDOH. The significance of addressing this issue is evident in data showing that SDOH lead to decreased life expectancy, increased chronic conditions, increased mental health issues, increased morbidity, and decreased education attainment (Singh et al., 2017). Since school nurses are rooted in public health and well acquainted with inequalities of students, they have a unique position to intervene and address the health and well-being of these students (Schroeder et al., 2018).

Population Impact

The population impacted by this policy change proposal include stakeholders in the Kentucky Department of Education (educators, city leaders, state government, local community), health care staff of KDE districts (RN, LPN, APRN, UAP, health departments, & community partners in healthcare), parents of school aged children, families of school aged children, and the students. There are 720,532 students in Kentucky public schools and since school nursing is

aimed at both the individual student and their community, it is expected that any issue affecting the health and education of the student, will affect an even greater number of Kentuckians.

Purpose

The purpose of this policy change proposal was to introduce Kentucky school nurses to a staffing model that effectively used social determinants of health, along with medical complexity of students, in order to increase accessibility of the school nurse to students who face higher levels of SDOH, to improve student outcomes. Specific aims of this policy proposal change were to gauge school nurses views on; using a staffing model focused on SDOH, incorporating this model in their districts, barriers to change, and recommendations for uptake of a staffing model focused on SDOH.

Ethics

No identifiable student data was used for this project. All data sets are available to the public on Kentucky Department of Educations website. No identifiable demographics from participants of the policy change proposal presentation were collected. This proposal was submitted and approved by the University of Louisville's IRB.

Setting

The setting for this policy change proposal includes all public school districts in Kentucky. There are currently 173 school districts with each school district required by KDE to have a District health coordinator on staff (2021), regardless of the presence of a nurse in their schools.

Stakeholders

Key stakeholders in a policy change proposal include the district health coordinators and school nurses in Kentucky. As public schools are funded by federal, state and taxpayer dollars,

ultimately the policy change directed at increasing accessibility of school nurses to students who face higher rates of SDOH will directly impact the state and communities involved.

Context for change

Facilitators

Facilitators for change for this policy change proposal include the availability of funding made available by the CARES and ESSER II. Other facilitators included are school nurses who participated in this policy change proposal.

Barriers

Barriers for implementation of this policy change proposal revolve around the Covid-19 pandemic, which cut the amount of time schools were in session, limited time for nursing staff and public health staff who were being used for contact tracing, and changed priorities for the 2020-2021 school year.

Conceptual Framework

Framework for the 21st Century School Nursing Practice

The Framework for the 21st Century School Nursing practice was developed in 2015 by NASN to provide evidenced based structure to school nursing. This framework is aligned with the CDC model: Whole School, Whole Community, Whole Child. The framework was designed to meet the medical complexity and SDOH of an increasingly diverse student population, while focusing on preventative community-focused healthcare delivery (National Association of School Nurses, 2016). The framework is intended to provide student-centered nursing care that includes the families, school and community. The framework consists of five main overlapping principles that encompass complete nursing care of the student: care

coordination; leadership; quality improvement; community/public health; and standards of practice (National Association of School Nurses, 2016).

Application of the framework to meet aims

The framework guides all school nursing practice and will be utilized for the introduction of a staffing model. Use of evidenced based research and clinical guidelines are essential to development of this policy change proposal. Many of the assumptions for this policy change proposal encompass components of standards of practice including; school nurses being clinically competent, adherence to a code of ethics, and the use critical thinking skills.

Using the principle of leadership, this policy change proposal encourages school nurses to be change agents by advocating for students who face SDOH and inequalities in care. As healthcare professionals the nurses can become system-level leaders locally, and at the state and national level.

Quality Improvement is the heart of this policy change. The goal of implementation of a staffing model is to improve student outcomes. Research shows that school nurses play an integral role in health and academic success of the students (Schroder, Malone, McCabe, & Lipman, 2018). Data collection methods that are easy to replicate and follow the standard of the NASN data imitative: Every Student Counts should be used (Maughan, Johnson, & Bergren, 2018). Previous research shows a need for data that demonstrates a direct correlation between nursing interventions and student outcomes. Begren (2016) showed that collection of nursing data is feasible. In order to show correlations, descriptive data in the research design should be used (Begren, 2016). Collection of data for this policy proposal was specifically made in the easiest format and design, in order to be replicated easily, and not cause a dramatic increase in time taken to document hours of nursing care provided.

Recognizing SDOH significantly impact health and academic outcomes of students is a key component of Community/Public health (Darnell, Hager, & Loprinzi, 2019; Daughtry & Engelke, 2018; NASN, 2016). A staffing model that looks at SDOH through student demographics (free/reduced lunches, poverty status) is shown to increase identification of students who are underserved and in need of school nursing services (Daughtry & Engelke, 2018). Increasing access to care and addressing SDOH will help to improve health and academic outcomes. This directly aligns with the goals of the KDE Health Services and with KDE's core value of equity.

Literature Review

Throughout the literature four themes emerged: (1) Lack of measurable data. (2) Inadequate nursing ratios with workloads not easily defined. (3) Identifying SDOH does identify at risk students. (4) Having a full-time nurse improves both health and academic outcomes of students.

Lack of data collection on nursing workload/staffing

The most consistent finding, in all articles, was lack of data. Position statements from the NASN echo this issue. As recently as March 2020, NASN published recommendations in a white paper for the need of evidenced-based data showing the impact a school nurse has directly on student outcomes, by utilizing different healthcare models of school nursing, staffing tools, and workload models (Maughan, 2020). Daughtry & Engkle (2018), successfully argued the need for hiring school nurses with the use of a staffing model based on SDOH but acknowledged the inability to generalize the tool for standard use. Jameson et al. (2018) reinforced the lack of a valid, reliable tool for measuring workload, and called on the NASN to collaborate with researchers and school nursing leaders to help in tool development. Endsley (2017) looked at

acute, community, and mental health staff workload and found key themes that were relevant to school nursing that should be considered when developing a workload tool: patient indicators, use of UAP, missed nursing care, environmental factors, and nursing satisfaction. Bergren (2016), wanted to see if data collection by nurses was feasible using a nonexperimental study to track school health office visits, medical provider/parent/staff communication, early dismissal, and medications administered as variables. The results from the data showed on average the school nurse sees around 43.5 students per day, or 6.5 students per hour, and administered 59 diverse types of medications for a total of 2,261 administrations. Bergren proved that measurable data can be obtained on variables related to nursing workload which is significant when arguing the importance of school nurses in student outcomes (2016).

Inadequate nursing ratios

NASN, CDC, and AAP all recommend nurse to student ratios 1:750. NASN has acknowledged that this is not based on evidence, as lack of data is an issue, but set as a national guideline (2015). A common finding in the literature is variability in nurse to student ratios. Western states tend to have fewer nurses for students, with many school districts not employing a nurse (Yoder, 2020). In Kentucky, 42% of high schools had a full-time nurse, but another 127,000 high school students had no nurse or limited access to a nurse (Darnell, Hager, & Loprinzi, 2019). In rural, eastern Kentucky, nurse to student ratios of 1:1050 are the norm (Pennington & Delaney, 2008). Fleming (2011) looked at student use of school nursing staff and found that 22 nurses employed in the school district, completed 51,767 encounters with 12,797 students. Rodriguez et al. (2013) found nursing ratios of 1:2055. Perhaps, the most alarming was a study pertaining to school children with special health care needs, where 50 nurses cared for 96,000 children, with caseloads ranging from ten to 11,969 students per nurse (Kruger et al.

2009). Bergen (2016) collected data on feasibility of tracking nursing interventions, saw an average caseload of 996, with documented caseloads ranging from 47 to 4,500 students per nurse, with nursing staff averaging the care of 1.6 schools, ranging from one school to six schools covered. Only one study, completed in an urban Midwest city, showed caseloads that met the NASN guidelines of 1:750 (Baisch, Lundeen, & Murphy, 2011). Daughtry &Engelke (2018), used a staffing model based on SDOH to argue for more nurses, saw higher levels of students receiving case management when the staffing ratio decreased. School nursing job satisfaction was also significantly decreased when staffing ratios were higher with nursing staff saying they felt the higher ratios meant they were doing more administrative roles, and less student care (Maughan & Adams, 2011). Repeatedly stated in the literature was the need for school nurses to accurately document the student populations being cared for to accurately describe nursing to student ratios.

Use of SDOH

The NASN, CDC, & the AAP call for greater emphasize on social determinants of health since SDOH directly affect children's health and well-being (National Association of School Nurses, 2017). Social determinants of health (SDOH) were discussed in four studies and three literature reviews. Common SDOH listed in the articles included race/ethnicity, poverty status, non-English speaking, literacy, and unsafe home environments. A RCT completed in a minority community within Los Angeles focused on utilizing school nurses in an after-school program that targeted underserved children who were obese (Wright, Giger, Norris, & Suro, 2013). These children were primarily Spanish speaking and lived in impoverished communities. The nurse-driven intervention yielded significant changes in the BMI of the female participants and decreased tv time in the male participants. A cross-sectional study interested in which students

used school nursing services most frequently found that poverty was the driving factor for school nurse visits in all race and ethnic groups (Fleming, 2011). The study emphasized that poverty level, can be a greater indicator than ethnicity/race in determining health status and should be considered for nursing practice. The development of an acuity tool for nurse staffing focusing on SDOH along with medical complexity of the students resulted in identification of students who were underreported, undiagnosed, and underserved (Daughtry & Engelke, 2018). The staffing model resulted in increased medication compliance, case management of students, and medical home placement. An evidenced based clinical guideline addressing SDOH provided advice for school nurses to address SDOH by providing culturally competent care, considering children and their families literacy levels while providing education, recognizing potential impacts from different SDOH, and advocating for underserved populations. Pennington & Delaney (2008) implied that school nurses are in the ideal position to stress the importance of health on educational outcomes. The varying levels of evidence in these studies (RCT to descriptive study) along with the evidenced based clinical guidelines, NASN statement articles, and Healthy People 2020, all indicate the critical role school nurses play in addressing and implementing care in students facing SDOH.

Improved Student outcomes with presence of a full-time nurse

The consensus from the AAP, Healthy People 2020, and CDC, are that school nurses make a significant impact on the health and lives of students (American Academy of Pediatrics, 2016;Center for Disease Control &Prevention, 2019; Healthy People 2020, 2019). The evidence pertaining to school nurses impact on student outcomes is well documented. Research in the past ten years has shown employment of a full-time nurse, over a part-time nurse, results in significantly greater outcomes. A quasi experimental study completed in a predominately

Hispanic school district compared the use of a full-time school nurse to a part-time nurse and saw a significant increase in asthma management and a decrease in absenteeism, in schools with a full-time nurse (Rodriguez et al., 2013). Pennington & Delaney (2008) found a decrease in early dismissal of students, when the student was evaluated by a full time nurse instead of a UAP. A cross-sectional study using demographic from 230 of the 232 high schools in Kentucky found decreased absenteeism, increased graduation rates, and higher ACT scores in schools that employed a full-time nurse compared to schools with a part-time or no school nurse (Darnell, Hager, & Loprinzi, 2019). The largest limitation in studies are that each population is complex and multi-factorial. This means data is not generalized to populations, and more valid and standardized documentation of nursing interventions is needed to solidify the importance that full time nurses make to the academic and health outcomes of student populations.

Policy change recommendation/Intervention

Student Acuity Tool for School Nurses

Daughtry & Engelke, developed the Student Acuity Tool for School Nurse Assignment (SATSNA). The purpose of the SATSNA was to show a correlation between school nurses and student outcomes in a meaningful way, to argue the hiring of more school nurses. As the literature has shown, there is limited data on staffing acuity of school nurses. Before the SATSNA, only two other published works discuss a school nurse acuity tool, but neither of those tools showed any evaluation of outcomes (Daughtry & Engelke, 2018). The SATSNA switched previous staffing models, based on medical acuity of students, to one that relied on SDOH as the main indicator for nurse placement in schools. SATSNA uses 80% weight of staffing for SDOH (free/reduced lunch; English as second language; and school performance), and 20% of the weight for staffing is given for medical procedures and chronic health conditions. Using the

SATSNA formula, schools are stratified based on grade levels (elementary, middle and high) and each school is scored within its category. The schools are then given a rank from 1 (low-need) to 3 (high- need). Nursing hours are assigned based on level of need: Low-need schools are given 8 hours of nursing care/week; moderate-need schools are given 16 hours of nursing care/week; high-needs schools are given 24 hours nursing care/week.

Table 1

Student Acuity Tool for School Nurse Assignment

Indicator	Weighted Percent (%)
Free & Reduced Lunch	30
NC ABC results performance composite	30
Limited English Proficiency	10
English as a second language	10
Identified health conditions	10
Invasive medical procedures	10

Note. This is the original model presented by Daughtry & Engelke, 2018.

Development of SATSNA for Kentucky School Nurses

Following the recommendations set forth by the NASN and literature, this policy change proposal recommended replicating the SATSNA, by using SDOH along with medical complexity of students, as the main indicators of assigning nursing care to schools. To adjust the SATSNA for Kentucky school nurse, collection of public data available on KDE's website regarding: Kentucky School Report Card, percentage of reduced/free lunch, and English as a second language/Limited English Proficiency should be categorized by school, and ranked by percentages above/ below national averages. This information would then be used to identify and assign schools as low, moderate, and high needs. Following the SATSNA model, nursing hours per week would then be divided by risk/need: low-need will receive 8 hours/week; medium-need

will receive 16 hours/week; high-need will receive 24 hours/week. This model can be adjusted for use for all districts in the state of Kentucky, that have nursing staff present.

Definition of pertinent variables:

Kentucky School Report Card:

A compilation of school/district-level data pertaining to, "demographics of students and staff; academic performance; educational opportunity; transition to adult life; school safety; and financial transparency."

Free/Reduced Lunch:

76% of students qualify for free/reduced lunches. Many school districts participate in the National School Lunch Program pilot called Community Eligibility (CE) which provides free breakfast/lunch to all students in schools with high percentages of economic disadvantaged students.

English as a second language (ESL):

Also termed English Learners (EL) is defined as students ages 3-21 whose primary language is another language other than English.

Table 2

Modified SATSNA for Kentucky Schools

Indicator	Weighted Percent (%)
Free & Reduced Lunch	30
Ky School Report Card	50
Identified health conditions	10
Invasive medical procedures	10

Note. Kentucky School report card includes information on school test scores, LEP, & ESL.

Feasibility of SATSNA

Special considerations for the development of SATSNA to meet district needs is fluidity and flexibility to account for students newly diagnosed with a medical condition, time for traveling between schools, and schools with larger amounts of higher medical needs. In order to argue that school nursing hours are tied to student outcomes data collection must be documented by school nurses. Since ratios of Kentucky school nurses are stretched and no uniform approach to showing the impact school nurses have on student populations is readily available, a quick approach to obtaining school nursing and student outcomes was needed.

Obtaining data from SATSNA

The use of the SATSNA in a large, diverse, school system, required a comprenhsive look at achievable goals and how they could be obtained in a timely fashion. Daughtry and Engelke, (2018), developed the SATSNA and used it to collect specific student data over several years. The CARES and ESSER II federal funding that was promoted by the KNA to be used for the hiring of school nurses in Kentucky school districts (2021), will only last until 2023. In order to show student outcomes in all districts, and argue for keeping those nurses who are currently funded by ESSER II or hiring of nurses in districts not funded, two online surveys via Microsoft Forms focused on student outcomes and nursing care were developed by the project lead.

Methods

Design

The design approach used for this policy change proposal is descriptive/qualitative. The policy change proposal recommendation was presented online in a twenty-minute pre-recorded PowerPoint presentation via Microsoft Teams by the project lead. A White paper summarizing the recommendations of this policy change proposal, written by the project lead, along with a copy of the PowerPoint, and the presentation were sent to the work emails of the participants.

The presentation was made viewable to the participants for two weeks. There was no limit on amount of time or sittings that it could be viewed. The presentation covered information regarding the current state of Kentucky School Nursing, followed by the recommendation of utilizing the SATSNA, along with how to collect measurable data pertaining to the staffing model and student outcomes. At the end of the presentation was a hyperlink which lead to the online survey via Microsoft forms. The survey consisted of four questions in the form of a SWOT analysis. The survey was available to the participants for two weeks with no limit on time for it to be completed.

Identification of participants

As a policy change proposal, feedback from as many nurses who work in public health, and particularly public school health, were desired. KDE requires that all school districts, regardless of the amount of nurses in their schools, employ a district health coordinator to oversee student health services (KDE, 2021). Information on the 171 district health coordinators, including contact information is readily available to the public. Utilizing a convience sample, ten district health coordinators were contacted via their KDE email accounts by the project lead. The ten district health coordinators were given access to the PowerPoint, presentation, and SWOT analysis. Of the ten district health coordinators contacted, six completed the analysis. Participants were able to provide feedback using the SWOT analysis without using any demographic or identifiable data. No informed consent was required.

Budget

This policy change proposal was completed as part of the requirements for DNP graduation by the project lead. All time given by the district health coordinators was given freely with no monetary gain.

Data collection

Data collected from the SWOT analysis was completed via Microsoft forms. Data was kept secure via personal laptop with double password protection.

Measurement

A SWOT analysis stands for strengths; weaknesses; opportunities; and threats. It is commonly used in businesses, as a way to look internally at valued strengths and weaknesses, while also looking externally at opportunities and threats. It is a proactive step when assessing a policy change, as it allows for awareness of factors that may have not been considered . SWOT analysis is a qualitative tool most often presented in a visual 2x2 grid. For this policy change proposal four questions, asking for two examples in each question, were asked at the completion of the PowerPoint presentation: 1. List two positive impacts you think using a model like the SATSNA can have on school nurse staffing 2. Name two items about the SATSNA you feel could be improved to be applicable to all Kentucky school districts 3. List two ways we could improve the model to best fit your districts needs to increase uptake of the model 4. List two barriers to implementation that you feel could prevent use of the model.

Process measures

Process measures of this policy change proposal focused on completion of this survey by school nurses, in order to get an adequate picture of plausibility of this policy change proposal.

Outcome measures

Utilizing a SWOT analysis this policy change proposal looked at outcome measures related to the aims of this policy change proposal to gauge school nurses views on; using a staffing model focused on SDOH, incorporating this model in their districts, barriers to change, and recommendations for uptake of a staffing model focused on SDOH.

Validity and Reliability

SWOT

SWOT models are descriptive and qualitative in design. The questions asked in the SWOT used for this policy change proposal were developed by the project lead to meet the specific aims of the project. The validity and reliability of the SWOT questions were not tested. The four questions were shared with an advanced practice school nurse not associated with the policy change proposal, who determined no change was needed to the language used in the questions.

SATSNA

The SATSNA is the only published study available that used SDOH along with medical complexity of the students to staff nurses. The authors acknowledge that the study lacked rigor, and may not be generalizable to other school districts (Daughtry and Engelke, 2018). Daughtry and Engelke, recommended focusing on outcomes instead of processes, which had led to the results they achieved, and may be more useful to other districts looking to develop a similar model (2018).

Demographic Data

Demographic data from the participants of this policy change proposal was kept confidential. The SWOT analysis was performed confidentially with no identifiers from the participants used. The role of the district health coordinator, per KDE, can be a nurse, social worker or counselor (2021). The specific aims of this project were to gauge school nurses, so all participants selected in the convience sample had nursing background. Level of educational attainment in nursing field and amount of time in current role were not asked. The six participants that replied are employed in counties deemed Rural by the USDA and US census

(2019). The six counties have similar demographics: town center with population >5000; the majority of citizens are non-hispanic Caucasian; the majority of students economically disadvantaged.

Data analysis

Data was collected via Microsoft forms. Qualitative data was reviewed and read by the project lead to look for themes. All answers from the SWOT analysis were placed in the SWOT grid, to show representation and diversity of answers. For answers that were the same among participants, only one answer was used that encompassed all, for example: a key barrier to implementation among many was related to the pandemic; for answers that said Covid-19, Coronavirus, pandemic, or related the barrier specifically to the pandemic; the term Covid-19 was used. No statistical analysis or SPSS was used for this policy change.

Results

Looking at a policy change proposal requires input from those who the change will affect, school nurses, and the Health District Coordinator. The policy change proposal was sent to ten school nurses in different districts. Six school nurses responded, of the six responses, all were also the district health coordinator. The four questions of the SWOT analysis each asked for two examples. All questions were answered by the six participants, resulting in 100% completion rate of the SWOT. The average time to complete the survey was 11 minutes. Each survey was completed confidentially with no identifiable data obtained.

Specific aims of this policy proposal change were to gauge school nurses views on; using a staffing model focused on SDOH, incorporating this model in their districts, barriers to change, and recommendations for uptake of a staffing model focused on SDOH. Using the SWOT

analysis to obtain feedback directly related to the aims helps to identify all areas of the policy change proposal recommendation by looking at strengths, weaknesses, opportunities and threats.

The first question focused on strengths, "List two positive impacts you think using a model like the SATSNA can have on school nurse staffing," found that all six participants felt it would positively impact students. Other answers included, it would help nurses know where they should be focused, help with identification of students, and help nurses follow an approach to staffing that takes in to account the complexities of school nursing. Two participants felt it could help show what school nursing can accomplish in schools.

The second question focused on weaknesses, "Name two items about the SATSNA you feel could be improved to be applicable to all Kentucky school districts," found four participants who identified as rural districts, three participants stated stratifying schools didn't pertain to them because they only had one middle and one high school; five participants concerned about not every district having a nurse employed; one participant concerned with data being collected because of school nurses time; one participant concerned about medical management of students because there is nobody else who can administer medicine; and one participant concerned asking how to look for those who suffer from SDOH.

For the third question focused on opportunities, "List two ways that we could improve the model to best fit your districts needs to increase uptake of model," five of the six participants identified help with data collection and management. Four of the participants wanted help developing the model for their districts, one participant wanted more education to districts on SDOH, one participant asked for a pilot project to be completed in both a rural and an urban area, and one participant asked to present it to stakeholders (school board, educators, parents) to argue for funding.

For the last question focused on threats, “List two barriers to implementation that you feel could prevent use of model,” some participants offered multiple barriers. The overwhelming two barriers were budget/cost and the covid-19 pandemic. All participants listed those two issues. Other key issues that were given: amount of time for data collection; nurses being “stretched too thin to accomplish”; unable to delegate tasks to educational staff and thus having to be available for the medically managed students.

Unexpectedly, four of the six participants answered more than two examples for the four questions answered. Two participants gave feedback for the policy change proposal that included the state of the pandemic and addressing their concerns for the upcoming school year.

Intervention modification

The basis of this policy change proposal comes from a pilot project during the 2020-2021 school year using the SATSNA model in a similar school district to the original site. The Covid-19 pandemic halted the 2020-2021 school year for many districts throughout the nation. The inability to gather data due to these extreme circumstances led to this model being presented in a policy change proposal with an accompanying white paper, for school nurses to be introduced to and in return receive and incorporate their feedback.

Discussion

The results of the SWOT analysis for this policy change proposal helped to shed light on areas of opportunity as well as highlighting changes that could be made to make the policy change proposal have better ease of use.

The first aim of this policy change proposal was to gauge the participants view on using a staffing model focused on SDOH. The SWOT analysis showed positive feedback on the use of the SATSNA. Participants felt that increasing the amount of students seen while decreasing time

focused on where to have a nurse each day would be helpful. The participants also felt incorporating a model that was used throughout the state would be helpful when presenting data to the KDE and school boards on school nursing and student outcomes. Participants stated that the model would help ensure equity and was evidenced-based. It was acknowledged that this model is in alignment with KDE core values and aligns with NASN and AAP recommendations.

Barriers to incorporating the model into the participants school districts showed weakness about generalization of the model. The majority of participants expressed their concern for a model that seemed more geared to urban districts, and expressed concern for the model fitting in their smaller, rural districts. The participants also expressed valid concerns about districts that had no nursing staff and how those districts could utilize this model. Generalization is arguably the largest issue found in school nursing data collection. The NASN urge researchers in school nursing to focus on standardized tools to measure school nurses interventions, and studies that are more rigorous in design (Maughan, Johnson, & Bergen, 2018).

Data collection was the majority of the suggestions related to opportunities and threats for change in the policy change proposal. Several participants highlighted that having a main data collector in each school district would help ease the workload of the school nurses. The participants also pointed out that having each district's model completed for them ahead of time, so that they could incorporate it right away, would make it more desirable. Data collection for school nursing should be focused on ease of use and take minimal time for completing (Maughan, Johnson, & Bergren, 2018).

Participants asked in multiple ways for education for all educational and health staff pertaining to SDOH. One participant highlighted that they were unaware how to determine how

to identify those who suffer from SDOH, when the majority of their students face financial disadvantages.

Expected threats related to this policy proposal change were the budget/cost and the Covid-19 pandemic. Schools are receiving funding this year from CARES and ESSER II but all the participants stated that the funding was not utilized for the hiring of school nurses. Instead, funding went towards school supplies, improved internet connections, summer school programs, and technology for students. The 2021-2022 school year will be in-person learning for all the participants districts, but with the rise of new variants of the Covid virus, participants acknowledged a large threat to uptake in this model was that the nurses are having to contact trace students, staff, and siblings of the students who are also in school. One participant stated that the Covid pandemic has highlighted the importance of public and school health, but that they are overwhelmed with state and federal regulations at this time, making change hard.

Inability to delegate tasks related to medical management of students to unlicenced school staff is a barrier in uptake and a weakness of the policy change proposal. Unfortunately, this is not easily changed, and state regulations about whom is able to administer medications and care are governed by Kentucky Nursing Laws and the KDA, though some districts are more proactive in their use of unlicensed school staff, this issue is one outside the scope of this policy change proposal.

School nurses help keep children in schools. School nurses are in an ideal setting to identify students who face SDOH, and help bridge the gap in care. In order to bridge those gaps in equity, Kentucky schools need a nurse placed in schools with children. Ideally a school nurse would be in every school in the state, but with budget/funding issues that isn’t the case. In order

to reach the students more effectively, Kentucky schools need a staffing model that is evidenced-based and helps to assign acuity to schools in all districts.

Limitations

This policy change proposal design is qualitative with limitations to the rigor and to the ability to be generalizable to all school districts. A key issue in school nursing data is the inability of data and measures that have proven validity and reliability. As school nursing ratios, caseloads, and governance is different in all states, it has been acknowledged that school nurses need to have a uniformed approach to their documentation in care. This policy change proposal only had feedback from six district health directors from rural counties making it hard to generalize to more urban and diverse districts within the state. It should also be discussed that the Covid-19 pandemic caused limitations not only in the ability to provide in-person interventions of this policy change, but also changed the priorities of the school health directors, who have been overwhelmed with contact tracing of students and staff, while making sure guidelines set by the KDE and CDC are followed, as one participant stated, “this pandemic has limited my ability to see past this week, I feel as if we are in survival mode.”

Conclusions

This policy change proposal could make a positive impact on the students in Kentucky. Identification of weakness, opportunities for growth and threats to a staffing model focused on SDOH can improve this staffing model. The SATSNA could be modified to meet recommendations from those who would use it. To gain more prospective, this policy change proposal should be shared with all school districts in Kentucky, with feedback analyzed and policy change proposal modified before moving forward with implementation of model.

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Appendix A

Online Survey

Policy Proposal: School nursing staffing model

1.List two positive impacts you think using a model like the SATSNA can have on school nurse staffing?

2.Name two items about the SATSNA do you feel could be improved to be applicable to all Kentucky school districts?

3.List two ways that we could improve the model to best fit your districts needs to increase uptake of model?

4.List two barriers to implementation that you feel could prevent use of model?

Appendix B

SWOT Analysis

Strengths • Increase amount of students seen • Decreased amount of time figuring out where staff should be placed • Evidenced based • Focuses on student outcomes • Helps ensure equity • Can be replicated • Could help show school nurses importance	**Weaknesses** • Not all districts have nurses • Not all districts have multiple schools • Not sure how to look for SDOH • Chronic disease management unable to be done by education staff • Contract tracing with Covid not considered • Rural areas and urban districts are vastly different
Opportunities • Utilizing a data collector for districts • Helping develop the model with each district • More education for districts on SDOH • Pilot projects in rural and urban districts • Present to stakeholders to argue for funding	**Threats** • Budget/cost • Covid-19 • Amount of time for data collection • Nurses stretched too thin to be able to accomplish • Unable to delegate tasks to educational staff; have to be available for the medically managed children

Appendix C

SATSNA surveys for data collection

Weekly Nursing Data

Hours spent in high-needs schools and number of children receiving care.

1.Number of hours spent in high-needs Elementary schools?

2.Number of hours spent in high-needs Middle Schools?

3.Number of hours spent in high-needs High Schools?

4.Number of new children receiving nursing care in high-needs Elementary schools?

5.Number of students receiving nursing care in high-needs middle schools.

6.Number of children receiving nursing care in high-needs high schools?

Appendix D

White Paper

Introduction:

School nurses play an integral role in lives of students. School nurses are often the only healthcare professionals in school districts, and can be the only healthcare professional that a student has access to. Outside of their home environments, children spend the majority of their time in schools (roughly 180 days/year). School nurses help provide care to students in acute situations, chronic management of medical conditions, and in referral of care to medical homes, along with providing hearing and visual screenings, and completing physicals (KDE, 2021; NASN, 2017).

Nurses are integral in keeping students healthy, and students must be healthy to optimally learn in schools. Yet, despite the advantages of having a nurse in schools there is no mandate in Kentucky or nationally requiring a school nurse. Many times nurses are the first to be cut from educational budgets, leaving no nurse in a school district. With federal funding from the Elementary and Secondary School Emergency Relief fund (ESSER II), Kentucky school districts now have funding available to provide for a nurse in every school through 2023. In order to utilize the funding and prove the need for school nurses to remain in school, a focus on how to best reach and provide care for school aged children needs to be utilized.

Current status:

In Kentucky there are 172 public school districts serving 720, 532 children. Within those districts there are 1017 school nurses (862 hired; 155 contracted) (KDE, 2021). The National Association of School Nurses (NASN) and the American Academy of Pediatrics (AAP) recommend a school nurse to student ratio of 1:750, but within Kentucky school districts there is inconsistency in those ratios, with some schools having a ratio of 0:5500. School districts were able to apply for ESSER II funding, that could be utilized to employ school nurses, though it is not clear if all districts allotted the funding for nurses. Regardless of funding availability, 20% of school districts do not have a nurse employed in their district, and over 45% of schools do not meet the recommended ratio set forth by the NASN and AAP (KDE, 2021).

Current Evidence:

NASN, AAP, and the Centers for Disease Control and Prevention (CDC), stress the importance of focusing on inequities that students may face. In the outgoing letter of NASN president Trefry stated, " The well-being of this nation depends on our ability to address health equity and social determinants for the children who attend school every day (Trefry, 2020)." Healthy People 2030 has focused objectives on SDOH, with the understanding that eliminating disparities students face has a direct impact on their education and future (CDC, 2018). NASN noted that the United States has a shortage in school nurses, with 25% of schools having no nurse available (2020). As a school nurse is often the only healthcare member in school districts, they are highly trained to recognize issues with students related to SDOH, learning, and all other health related barriers. Utilizing the framework of the 21st century school nurse, set forth by the NASN, school nurses care is student centered- aimed to provide public health, care coordination, quality based care, and be health care leaders in educational systems (NASN, 2016).

Recommendations:

There are no uniformed staffing guidelines for school nurses. Previous studies focused on caseloads related to medical complexity of students, but, didn't account for students that face increasing levels of inequity. One model published in a school system in Wake Forrest, showed that by flipping staffing acuity models from one focused on medical complexity of students, to one that focused on SDOH along with medical complexity of students, resulted in increased identification of high-needs students, increased case management of chronic conditions, increased identification of students without medical homes, increased parent and teacher satisfaction of student management, and successfully argued for the hiring of new nurses, a result of their data collection (Daughtry & Engelke, 2018). By replicating and implementing a staffing acuity model that focuses on social determinants of health, along with medical complexity of students, school nurses can provide access to care for students who may have previously "fallen through the gaps." The use of a model focused on SDOH can help bridge gaps in health disparities and provide equity to students who are at higher risk of suffering from SDOH. Use of a model focusing on SDOH along with medical complexity of the students can also generate data proving that focusing on SDOH can increase the amount of children who are receiving care through school nursing services, and be used to argue for the hiring or retainment of school nurses throughout school districts.

Conclusion:

The NASN and the AAP argue the importance of a school nurse in every school. Schools with nurses have lower absenteeism, higher graduation rates, increased management of chronic diseases, earlier detection of student problems, and increased uptake of medical homes. Recent funding from ESSER II helped some districts in Kentucky fund school nurses through 2023, though funding specifically for a school nurse was not required. Kentucky schools are still not to current recommendations of one nurse per 750 students. NASN, AAP, and the CDC, recognize the important of addressing SDOH in students. By having school nurses focus on SDOH when staffing schools, they will be better equipped to provide care to high-needs students, bridging the gap in equity, and increasing positive student outcomes. A secondary benefit would be data collected showing increased uptake of students in school nurses care, which can be leveraged to argue the importance of employing or maintaining a nurse in schools after ESSER II funding is gone.