

The School Nurse's Role in the Identification and Handling of Somatization in Students

By

Victoria M. Kepler

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Thesis Committee

Monica Wallace, Ph.D., Chair

James Rust, Ph.D.

Seth Marshall, Ph.D.

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ABSTRACT

The purpose of the current study was to understand more about the number of students who go to the nurses' office complaining of medically unexplained symptoms (MUS) and determine if nurses are involved in any school mental health support teams. A 34-question survey was created by myself to address three hypotheses in this study. Nurse's reported a minimal level of involvement on school support teams within the multi-tiered system of support (MTSS), indicating support for hypothesis 1. The second hypothesis was not supported with respondents indicating they see more than just younger populations as having more medically unexplained symptoms. The third hypothesis was supported with respondents indicating they are trained in identifying MUS. In addition to the three research questions, eight items in the survey were included to understand more about the function of the nurses' role and what happens to students when they visit the school nurse.

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CHAPTER 1

INTRODUCTION

Overview

Medically unexplained symptoms (MUS) or somatization are defined as, “patient-reported physical symptoms for which physicians cannot find corresponding physical pathology or for which underlying physical pathology does not adequately account for the patient’s description of symptom severity or disability” (p.99; Razali, 2017).

Somatization is often found to be correlated with psychological distress that stems from internalizing disorders such as anxiety and depression (Razali, 2017). Studies have found that students who present with somatic complaints have higher reported absences, increased risk for internalizing disorders that impact social-behavioral functioning, and poor academic performance (Hughes, Lourea-Waddell, & Kendall, 2008; Saps et al., 2009; Shannon, Bergen & Matthews, 2010; Zolog et al., 2011). There has been a documented phenomenon among the nursing literature regarding students who frequently visit the school nurse (five or more times per year) presenting with somatic complaints (Shannon et al., 2010). These frequent visitors are not a majority of the school population but they do account for the majority of visits to the school health office (Leaver, 2014; Shannon et al., 2010). In addition to psychological distress, students who frequently visit the school nurse consequently miss core instructional time, experience social isolation, academic difficulties due to frequent absenteeism, and loss of peer relationships (Zolog et al., 2011).

Considering that somatization is correlated with poor attendance and poor academic performance, it is of the utmost importance that children are identified early

and receive social-emotional and behavioral supports. Children who are identified with social-emotional or behavioral disorders may qualify for services under the special education category of Emotional Disturbance (ED). There have been many criticisms of the ED category, with some citing that the eligibility criteria are vague, redundant, and contradictory (Gresham, Hunter, Corwin & Fischer, 2013). Rarely do students qualify for this category, as the rate of services for students with an emotional disturbance has remained at less than 1% for around 40 years (U.S. Department of Education, 2011). The discrepancy between those who receive services and those who do not is concerning as this leaves many students without support or interventions when they may need them the most.

Currently, schools are adopting a prevention oriented Multitiered System of Support (MTSS) to support academic, behavioral, and social-emotional functioning in students (Kilgus, Reinke, & Jimerson, 2015). The adoption of the MTSS in schools means that schools also must implement a way of identifying students in need of intervention. Universal screening is a method of using a questionnaire to identify children who have developed or are at-risk of developing social-emotional and behavioral difficulties (Gresham et al., 2013; Kilgus et al., 2015). The accurate and early identification of students is central to the tiered model of support because early service intervention and prevention can mean the reduction of negative life trajectories (Kilgus et al., 2015). The use of screeners for the detection of internalizing and externalizing disorders means that children with mental health difficulties can receive services where they may have otherwise gone untreated (Gresham et al., 2013; Kilgus et al., 2015).

School nurses may be able to help identify additional students who were not caught on a school's screener as they receive frequent visitors in their office who complain of MUS.

When implementing a MTSS within a school, a collaboration between the school personnel, community, family, and the students is key in order for the MTSS to be effective. Each person involved in the collaboration has a unique set of skills that are key to the success of providing services that are not fragmented (Cowan, Vaillancourt, Rossen & Pollitt, 2013). School psychologists are often looked to as the school-employed mental health professional who should have the knowledge and skills to identify students with mental health concerns (Bohnenkamp, Stephan & Bobo, 2015). School psychologists are largely relied upon in the creation and implementation of a school-wide support system when there are other professionals that could provide valuable support, such as the school nurse office. The purpose of the school nurse office is to promote the health and well-being of all students in order to best support their academic performance (Bohnenkamp et al., 2015; Leaver, 2014). School nurses are in a unique position because they interact continually with students who have both mental and physical health problems, possess extensive knowledge about community resources, and have the skills to identify physical and mental health concerns (Bohnenkamp et al., 2015). Unfortunately, school nurses are often overlooked when schools attempt to create a collaborative and supportive environment for student-oriented mental health support (Bohnenkamp et al., 2015). Through interprofessional collaboration, school nurses could be critical in helping identify additional students who may have otherwise been overlooked by a school screener (Cowan et al., 2013).

In a study by Zolog et al. (2011), students with four or more somatic complaints were found to be absent more frequently, have difficulties with peer relationships, and difficulties with academics when compared to students who had three or fewer somatic complaints. It is important to consider the possible impact the school nurse could have on the levels of absenteeism as some students who present with severe somatic symptoms can be sent home or referred for further medical examination at the child's pediatrician (Bohnenkamp et al., 2015). In either scenario, a child is missing school due to their somatic complaints. School's often utilize surveys that are given to all students in order to identify specific students who are at risk, these are known as a universal screener. School's also rely on teachers or parents to identify students and refer them for mental health support. School nurses could help identify additional students who may need mental health support that were not identified on the school's universal screener or identified by another adult. The purpose of the current study was to understand more about the number of students who go to the nurses' office complaining of medically unexplained symptoms (MUS) and determine if nurses are involved in any school mental health support teams.

Internalizing Behavior Disorders

Psychopathology in children often is categorized into either internalizing or externalizing disorders. Internalizing disorders are behaviors that are manifested inwardly in psychological and emotional states such as anxiety, depression, and somatic complaints (Lane et al., 2012; Liu, Chen, & Lewis, 2011). Externalizing disorders are behaviors that are manifested against the physical environment and include verbal or physical aggression, delinquent acts, and coercive tactics (Lane et al., 2012; Liu et al.,

2011). Internalizing disorders differ from externalizing disorders in that they often go unnoticed and are less likely to be targeted for treatment because they are not as observable as externalizing behaviors (Lane et al., 2012). Because internalizing disorders often go unnoticed, children who suffer from internalizing problems are less likely to receive the help or supports they need to succeed in school (Lane et al., 2012). Somatic complaints are one of the few externalizing manifestations of an internalizing disorder that can be documented or identified through observations.

Somatization

Reports of physical symptoms with no known medical cause are considered somatic complaints (Hughes et al., 2008; Shannon et al., 2010). Somatic complaints are often a sign of an underlying anxiety disorder and are associated with states of anxiety (Hughes et al., 2008; Razali, 2017). Common somatic complaints include but are not limited to: fatigue, dizziness, general aches, nausea, vomiting, and abdominal discomfort (Hughes et al., 2008; Razali, 2017). There is evidence from several studies that headaches and abdominal pain are the most commonly reported somatic complaints made by children (Saps et al., 2009; Shannon et al., 2010; Zolog et al., 2011). The study by Zolog et al. (2011) emphasizes the commonality and prevalence rates of somatic complaints in children. A survey of preadolescent and early adolescents by Zolog et al. revealed that 58.5% reported symptoms of headaches on more than one occasion and 57% presented with abdominal pain. Less common symptoms reported on more than one occasion included leg pains, tiredness and dizziness (Zolog et al., 2011).

Several studies have provided strong evidence that there is an association between somatic complaints and internalizing disorders in children (Hughes et al., 2008; Saps et

al., 2009; Shannon et al., 2010; Zolog et al., 2011). In a study by Zolog et al. (2011), the associations between internalizing disorders, somatization, and functional impairment were examined. Using the Children's Depression Inventory (CDI; Zolog et al., 2011), The Somatic Questionnaire, and the Screen for Child Anxiety and Related Emotional Disorders (SCARED; Zolog et al., 2011), Zolog et al. conducted a logistic regression that revealed an association between internalizing disorders, somatization, and functional impairment. Higher ratings on the CDI were correlated with an increased probability of the presence of a somatization disorder (Zolog et al., 2011). Similarly, increases in general anxiety symptoms were correlated with the increased probability of the presence of a somatization disorder (Zolog et al., 2011). Increases in the symptoms of separation anxiety and social phobia were also found to increase the probability of a somatization disorder (Zolog et al., 2011).

The prevalence of abdominal pain was studied by Saps et al. (2009) in a cohort of students between third and eighth grade. Surveys were administered to students weekly over a period of a year. Students reported their presence and severity of symptoms and pain behavior, as well as psychological functioning (Saps et al., 2009). Results revealed a positive correlation between anxiety scores, depression scores, and worsening abdominal pain (Saps et al., 2009). Results also indicated that students who reported abdominal pain within the first month of the administration of the questionnaires were more likely to continue to report abdominal pain on the proceeding questionnaires (Saps et al., 2009). These results suggest that somatic complaints and feelings of abdominal pain are persistent and not isolated. In a separate study by Hughes et al. (2008), results on the Multidimensional Anxiety Scale for Children (MASC; Saps et al., 2008) found

that children with anxiety disorders presented with more somatic complaints than the non-anxious control group from. Additionally, children with anxiety disorders experienced more dizziness, tiredness, general aches, headaches, nausea, stomachaches, and vomiting when compared to the non-anxious control group on the Child Behavior Checklist (CBCL; Hughes et al., 2008).

Academic and Social Implications of Somatization

There is a pool of research that has identified a correlation between internalizing disorders, school dropout, low academic achievement, and increased absenteeism (Ackerman, Izard, Kobak, Brown, & Smith, 2007; Grills-Taquechel, Fletcher, Vaughn, Denton, & Taylor, 2013; Hughes et al., 2008; Saps et al., 2009; Zolog et al., 2011). In one longitudinal study, economically disadvantaged students participated in research that aimed to understand more about the relationship between internalizing behaviors and reading problems (Ackerman et al., 2007). Two direction effects were tested and results indicated an association between the presence of a reading problem in third grade and increased internalizing behaviors in fifth grade, but no association was found between internalizing behaviors in the third grade and an increase in reading problems in the fifth grade (Ackerman et al., 2007). These results reveal a correlation between increasing academic problems and an increase in internalized negative emotionality in children (Ackerman et al., 2007).

Separation anxiety in first grade students has also been shown to be a predictor of poor reading performance in schools (Grills-Taquechel et al., 2013). For first grade students, higher scores on the separation anxiety scale of the Multidimensional Anxiety Scale for Children (MASC; Grills-Taquechel et al., 2013) were correlated with lower

scores in reading as assessed by the Woodcock-Johnson PsychoEducational Test Battery-III (WJIII; Grills-Taquechel et al., 2013) and the Test of Word Reading Efficiency (TOWRE; Grills-Taquechel et al., 2013). Interestingly, another finding of this study showed that high scores on the harm and avoidance subscale of the MASC were also significantly correlated with lower scores on both passage comprehension and reading fluency (Grills-Taquechel et al., 2013).

In an article by Hughes et al. (2008), results revealed a correlation between students who reported a higher frequency of somatic complaints and poorer academic performance. Participants consisted of control children with no anxiety and children with anxiety who were identified using The Anxiety Disorders Interview Schedule for Children (ADIS-C; Hughes et al., 2008), the physical symptoms subscale of the MASC (Hughes et al., 2008), and the somatic complaints subscale of the Child Behavior Checklist (CBCL; Achenbach, 1987). Academic and adaptive functioning was measured using the Teacher Report Form (TRF; Achenbach, 1987). Statistical analyses showed a significant correlation between child and parent reports of somatic complaints and academic performance (Hughes et al., 2008). An association was also found between anxiety, internalizing symptoms, and academic performance (Hughes et al., 2008). Results from this study suggest that anxiety and somatic complaints may be a factor that affects academic achievement in students (Hughes et al., 2008). Hughes et al. gives several possible reasonings as to why there could be a connection between poor academic performance and somatic complaints. Students who present with somatic complaints may refuse to attend school or visit the nurse's office more which may lead to a gap in their education, or children could be in such pain that they cannot focus while in class

(Hughes et al., 2008). Students who present with somatic complaints tend to avoid school and this avoidance could lead to increases in drop-out rates (Hughes et al., 2008).

Frequent absenteeism has been identified and correlated with poor academic performance (Saps et al., 2009). If students who present with somatic complaints avoid or refuse to attend school then they may not perform as well as others who attend school regularly. Saps et al. (2009) found that students who reported with somatic complaints were four times more likely to miss school and 28% of participants who reported somatic complaints missed at least one day of school during the study. This increase in absenteeism was also found in Zolog et al. (2011) who looked at functional impairment in students who presented with somatic complaints. In their study, of the children who presented with four or more somatic complaints, 44.7% were reported to have missed school and 24.3% of the children who presented with three or less somatic complaints missed school (Zolog et al., 2011). Increased somatic complaints also have negative social implications where relationships with peers are negatively affected (Zolog et al., 2011).

Identification of Behavioral and Emotional Problems in Schools

Children who have internalizing or externalizing disorders that impact their ability to learn may qualify for special education services under the Emotional Disturbance (ED) category. Many students go underserved in this category partly due to the long-held belief that schools should not be held responsible for the emotional and mental well-being of a child, and partially because of the stigma that surrounds the topic of mental health (Gresham et al., 2013). When a child's symptoms become so severe that they qualify for ED, they are often resistant or unresponsive to interventions (Gresham et al.,

2013). According to the 2015 National Association of School Psychologists (NASP) Position Statement on Mental and Behavioral Health Services, many children and adolescents often go unidentified and underserved due to the vague criteria for qualification of services in the ED category, but these children still struggle mentally and behaviorally such that it negatively impacts their functioning socially and academically. Schools are in a central position where mental and behavioral services can be provided for all students (National Association of School Psychologists, 2015). Using a MTSS, all children can be screened for mental and behavioral functioning and provided services at the intensity that suits their needs (Gresham et al., 2013; National Association of School Psychologists, 2015). The introduction of Response to Intervention (RtI) has helped schools move away from the wait to fail phenomenon by intervening early and providing services to children who need it. If schools implement RtI then they will need a means of identifying students in need of services. Universal screeners used in schools are short questionnaires that assess risk or at-risk students for various problems (Kilguset al., 2015). After permission is granted to screen mental health, many schools utilize universal screeners for the detection of mental and behavioral difficulties in students, often checking for externalizing and internalizing problems.

Scales for Children

Universal screeners exist for students in most grades but there is a lack of an appropriate scale for children in younger grades such as kindergarten and first grade. I found a limited amount of research on anxiety and behavioral monitoring conducted on children below 8-years of age. The fears and worries of children between 4 and 6 years of age are typically focused on immediate and concrete threats (Muris, Merckelbach,

Gadet, & Moulaert, 2000; White & Hudson, 2016). Because children between 4 and 6 years of age have a limited ability to worry and consider the future, it has been thought that there is little need to conduct research on this age group (Vasey, 1993; White & Hudson, 2016). By the age of 7 to 8 years of age, children begin to develop an understanding of cause and effect relationships, theorize and imagine negative outcomes, and worry (White & Hudson, 2016). This suggests that children 7-years of age and older have the cognitive capacity to stress and worry about the future, leaving a need for further research on age appropriate anxiety and depression measures.

Some studies have adapted measures typically intended for ages 8-years and older and used those measures with 7-year old children and even 6-year old children while still using the 8-year old norms (Grills-Taquechel et al., 2013; Meuret, Ehrenreich, Pincus, & Ritz, 2006). In a search through the literature, behavior is typically monitored through the use of report measures from parents and teachers such as the Child Behavior Checklists (CBCL), Teacher Response Forms (TRF), Parent Response Forms (PRF) and Interviews (Grills-Taquechel et al., 2013; Hughes et al., 2008; Muris et al., 2000; White & Hudson, 2016). While these measures have adequate validity and reliability, they are not a guaranteed way to identify all children who may need services. School nurses can provide the extra opportunity to help with child find and referrals for interventions for children who present with somatic symptoms.

The BASC-3 is a known standardized instrument that is used in schools to help identify emotional and behavioral difficulties in students (Reynolds & Kamphaus, 2015). The BASC-3 is a “multimethod, multidimensional system used to evaluate the behavior and self-perceptions of children and young adults ages 2 through 25 years” (Reynolds &

Kamphaus, 2015, p.1) with various components to help identify emotional and behavioral difficulties from different viewpoints. The BASC-3 offers several ways to assess emotional and behavioral difficulties including parent, teacher, and self-report scales. The BASC-3 authors conducted a readability analysis and measured the reading level of the Self-Report of Personality (SRP) through the Flesch-Kincaid Reading Index, and found that the reading level of the SRP is at a Grade 2 level (Reynolds & Kamphaus, 2015). The BASC-3 does offer a SRP-Interview that is a semi-structured interview for children ages 6 and 7, but the interview is not brief and requires some training prior to administration (Reynolds & Kamphaus, 2015). In addition to the above listed forms, the BASC-3 offers a way to monitor and track behavior interventions for students, called the BASC-3 Flex Monitor (Kimbell & Lehner, 2016). The Flex Monitor is an internet-based tool that allows the user to select items from the BASC-3 item pool and create appropriate behavior or emotional monitoring tools (Kimbell & Lehner, 2016). The BASC-3 Flex Monitor has a TRS, PRS, and SRP, but the lowest age to be completed at the SRP level is age 9 (Kimbell & Lehner, 2016). Due to the minimum reading level required by the BASC-3 self-report rating scale, there is no appropriate self-report brief assessment system for children in kindergarten and first grade levels, and this is the case with most other standardized behavior rating assessments.

Many schools use screeners that are free and available to the public, one such screener is the Student Risk Screening Scale (SRSS). The SRSS was originally created by Drummond (1994) but has since been revised to add items that correlate with internalizing behaviors (Lane et al., 2012). The Student Risk Screening Scale for Internalizing and Externalizing Behaviors (SRSS-IE) is a screening tool that identifies

behaviors that may require intervention. The SRSS-IE comprises the original seven items from the first scale which are considered the Externalizing Scale (SRSS-E7) and includes five new items that make up the Internalizing Scale (SRSS-I5; Lane et al., 2012). The SRSS-IE is used by teachers to evaluate students on a 4-point Likert-type scale and the scores are then used to place children in one of three categories: no risk, moderate risk, high risk. The SRSS is used in public schools to assist in identifying students with internalizing disorders, but lacks a somatic symptom item to help identify additional students with internalizing disorders (Gardner, 2017). The SRSS-IE has been found to be a reliable and valid measure for identifying students with internalizing and externalizing behaviors (Lane et al., 2012), but the lack of a somatization item could lead to students being unidentified and therefore underserved.

Due to the lack of an appropriate scale for kindergarten and first grade students, a possible way to monitor somatic complaints could be through records of absenteeism and school nurse visits. Frequent visits to the school nurse or frequent absenteeism could be an indicator of an internalizing disorder. School nurses have the capability to track and provide data on students who visit with somatic complaints. Meaning nurses could assist in the identification and referral for students with medically unexplained symptoms.

School Nurse Research

The documented phenomenon of “frequent visitors” was first identified in school aged children (Shannon et al., 2010). Research since the original documentation of this phenomenon has found an inverse correlation between visits to the school nurse and lower academic ability (Shannon et al., 2010). When a student goes to visit the school nurse, they receive an assessment from the nurse to identify the cause for the child’s

illness. The school nurse has the ability to assess the child's level of wellness and determine the child's needs as far as the next step in the treatment of care. Nurses can assist in the identification, assessment, and referral process of children who present with somatic complaints as somatization is an indicator of an underlying mental health problem that requires attention (Shannon et al., 2010).

In a study by Leaver (2014), seven elementary schools were recruited to participate in a study to compare student reports of subjective well-being between children who visit the school nurse with somatic complaints repeatedly and students who do not repeatedly visit the school nurse with somatic complaints. The Student-Well Being Profile-American English (SWBP-AE; Leaver, 2014) was used to assess health status, school environment, social relationships, and school as a means of self-fulfillment (Leaver, 2014). Repeat visitors were defined as 2 or more visits to the school nurse unrelated to chronic illness. Of the 320 students in the study, 51.5% of all girls in the study were found to be repeat visitors, 36.4% were boys, 51.5% were 11 years of age, and Caucasian children were the highest percentage of repeat visitors (75.7%; Leaver, 2014). Children who had somatic complaints were twice as more likely to visit the school nurse than those with chronic illness or children who had findings of physical symptoms. Results indicated that students' who had a lower perception of their health was the strongest predictor for repeated visits to the nurse with vague complaints (Leaver, 2014). This means that students who could not accurately identify what was wrong, or what was ailing them, often could not articulate to the nurse and therefore presented with vague complaints of illness with no medical findings. Additionally, it was found that 10.31% of the participants were repeat visitors to the school nurse (Leaver, 2014). This

number is significant given that these are students who are missing crucial class time and social opportunities while they are in the nurse's office. These results indicate a need for understanding more about why these children are repeatedly visiting the nurse and what can be done to help them.

School nurses possess the knowledge and assessment skills to identify mental and physical health concerns. The school health office is typically the first place a student goes to before receiving behavioral health services as visiting the school nurse is less stigmatized than receiving help from a mental healthcare professional (National Association of School Nurses, 2018). The nurse is often overlooked when creating a team and collaborating among professionals within a school to provide mental health supports to students (Bohnenkamp et al., 2015). The NASP Position statements neglect to mention the school nurse's role in mental health support, often only citing school administration as part of the school mental health support team. School nurses are experienced in providing care to students and collaborating with the school, home, and health care providers within the community (Bohnenkamp et al., 2015; National Association of School Nurses, 2018). Therefore, school nurses can help decrease the fragmentation of services within a school for students who present with somatic complaints as they can both assist in the identification and referral process for behavioral supports.

Purpose of the current Study

The purpose of the current study was to understand more about the type and number of students who go to the nurse's office complaining of medically unexplained symptoms; and to ascertain if nurses are involved in any school mental health support

team. Currently, there is a gap in the research with no recent information regarding nurses and the documented phenomenon of ‘Frequent Visitors’ (Shannon et al., 2010). There is also a lack of information regarding the school nurses’ professional position in relation to school support teams in the NASP Position Statements. The National Association of School Nurses (NASN) Position statements frequently cite that nurses are well suited for mental health screening and provisions (NASN, 2018). Although the NASP Position statement does not specifically mention the school nurses role as part of the MTSS, school nurses could be a viable and necessary part of school mental health support teams. It is estimated that school nurses spend about one third of their time providing students with mental health services (Bobo & Shubert, 2013). Since school nurses spend so much time providing mental health services, they are one of the professionals that the school support team should frequently collaborate with. Understanding more about students with somatization who visit the nurse will ultimately help in planning and implementing school support services for students with social-emotional and behavioral problems.

Hypotheses

Hypothesis 1: It is hypothesized that school nurses will report a minimal level of involvement on school support teams within the Multi-Tiered System of Services.

Hypothesis 2: It is hypothesized that nurses will report younger populations as having more medically unexplained symptoms than older populations.

Hypothesis 3: It is hypothesized that nurses will report that they are trained in identifying Medically Unexplained Symptoms (MUS).

CHAPTER II

METHOD

Participants

Data utilized for analysis of the study came from nurses who volunteered to take the online survey that was provided as a link through the National Association of School Nurses (NASN) Facebook group, school nurses in the Tooele County School District, and school nurses recruited through email from the MTSU listserv. Of the total number of school nurses who responded ($N = 30$), 40% consisted of elementary school nurses, 23.3% middle school nurses, 20% high school nurses, and 16.7% other (e.g., all grades, K-3, etc.). Of the elementary school nurses, 50% reported they had been practicing for 1-5 years, 25% for 6-10 years, 8.3% for 11-15 years, 16.7% for 15-20, and 0.0% for 21+ years. Of the middle school nurses, 42.9% reported they had been practicing for 1-5 years, 42.9% for 6-10 years, 14.3% for 11-15 years, 0.0% for 15-20, and 0.0% 21+ years. Of the high school nurses, 33.3% reported they had been practicing for 1-5 years, 16.7% for 6-10 years, 0.0% for 11-15 years, 50.0% for 15-20, and 0.0% 21+ years. Of the school nurses who responded as other, 20.0% reported they had been practicing for 1-5 years, 60.0% for 6-10 years, 0.0% for 11-5 years, 20% for 15-20, and 0.0% for 21+ years. Table 1 contains the demographics for each level of school nurse.

Table 1

Demographic Information of School Nurse Respondents by How Long They Have Worked

School	<i>N</i>	1 – 5 Years	6 – 10 Years	11 – 15 Years	15 – 20 Years	21+ Years
Elementary	12	50.0%	25.0%	8.3%	16.7%	0.0%
Middle	7	42.9%	42.9%	14.3%	0.0%	0.0%
High	6	33.3%	16.7%	0.0%	50.0%	0.0%
Other	5	20.0%	60.0%	0.0%	20.0%	0.0%

Measures

The survey used was created by the primary researcher. Participants accessed the survey at Qualtrics website using the following link:

https://mtsu.ca1.qualtrics.com/jfe/form/SV_cTs9SyB9XAgAHat. The survey consisted of 34 questions that addressed the study hypotheses with additional questions about the school nurse's role. Nurses from elementary school, middle school, and high school were asked to read the statements and rate how well they agree with the statement. Responses consist of a mixture of 5-point Likert-type questions (Strongly Disagree, Disagree, Undecided/Unknown, Agree, Strongly Agree, and Does Not Apply) and fill in the blank. The survey was broken into four different parts, 16 questions addressed the first hypothesis regarding whether nurses are involved in MTSS, 4 questions addressed the second hypothesis regarding whether younger populations report more MUS, another 4 questions addressed the third hypothesis regarding whether nurses are trained in identifying MUS, and eight additional items were included in the survey to understand more about the school nurses' role. A complete breakdown of the survey and which questions support which hypothesis can be found in Appendix A.

Procedure

Participants were initially recruited through a link that was posted on the National Association of School Nurses Facebook page and emails were sent out to the school nurses in the Tooele County School District in Tooele, Utah. Additionally, an email was sent through the schoolpsychologymtsu@lists.mtsu.edu asking alumni and faculty in the school psychology department to forward my email and link to the survey to any currently practicing school nurses they knew. Once participants accessed the link, they were instructed to fill out the consent form before proceeding to the survey. The consent form can be found in Appendix B and the recruitment email can be found in Appendix C.

The survey took about 15 minutes to complete and participants were allowed to skip or withdrawal from the survey at any time. Nurses who completed the survey were asked to provide their workplace (e.g., I am a nurse at a(n): Elementary School, Middle School, High School, Other) and how long they had been working as a school nurse. All responses were recorded and stored in Qualtrics XM. Data was analyzed in SPSS and through the Qualtrics XM crosstab feature to create contingency tables and frequency distributions. No identifying information was recorded and all participant's information was kept anonymous. Participants who withdrew from the survey did not have their responses recorded. Once finished with the survey, participants were taken to a page where they could review and edit their responses, download responses, and then submit their survey. Once participants submitted their survey a new page popped up with a message that thanked them for taking the time to complete the survey and the message included contact information for myself and my faculty advisor should they have questions.

CHAPTER III

RESULTS

Hypothesis 1. It was hypothesized that school nurses would report a minimal level of involvement on school support teams within the Multi-Tiered System of Services (MTSS). Using SPSS, Cronbach's alpha was calculated to measure the internal consistency reliability of the 16 questions on the survey that asked about the school nurse's involvement in MTSS. Cronbach's alpha for the 16 questions relating to hypothesis 1 was $r = 0.76$, indicating good reliability.

Table 2

Cronbach's Alpha for Hypothesis 1

N of Items	Cronbach's Alpha
16	0.76

To test hypothesis 1, an average response score was obtained using SPSS for the 16 different questions. Response options were coded between 1 and 5 (Strongly Agree = 5, Agree = 4, Undecided/Unknown = 3, Disagree = 2, and Strongly Disagree = 1). Questions that included the response option, "Does Not Apply," were coded as 0 and not quantified into these averages. An average score of 3 or lower (i.e., Likert ratings that correspond with unknown, disagree, or strongly disagree) would indicate support for hypothesis 1. To test this, a one tailed one sample t-test ($\alpha = .05$) was run in SPSS to compare the mean of the sample from the survey ($M = 3.54$) to the expected mean ($M = 3$). Results indicated that the mean of the sample group differed from the expected mean;

$t = 2.19, p = .02$ These results do lend support to the hypothesis that school nurses would report a minimal level of involvement on school support teams within the MTSS.

The 16 questions were also used to gather qualitative data on the school nurse's overall role within the MTSS, with questions regarding if they have referred a student for an evaluation, attended Individualized Education Plan (IEP) meetings, provided screening measures for internalizing disorders, and whether they feel included within the school culture and environment. A total of 27 responses were recorded across the 16 different questions.

Using frequency distributions, respondents indicated that the question, "My head nurse/or myself have been part of the process in choosing a questionnaire that helps screen students for mental health issues such as somatization or medically unexplained symptoms," did not apply with a frequency of 21.6% for respondents. Of those that responded, 10.8% of nurses did not feel that the question, "My school provides a school wide survey given to all students to help identify students with mental health issues," applied to them. See Appendix D, Table D1 for the response rates of the 16 questions.

Hypothesis 2. It was hypothesized that nurses will report younger populations as having more medically unexplained symptoms than older populations. Cronbach's alpha was calculated using SPSS to measure the internal consistency reliability of the 4 questions on the survey that asked about the population type that reported more MUS. Cronbach's alpha for the 4 questions relating to hypothesis 2 was $r = 0.61$, indicating questionable reliability.

Table 3

Cronbach's Alpha for Hypothesis 2

N of Items	Cronbach's Alpha
4	0.61

Hypothesis 2 was tested by obtaining an average response across the 4 different questions using SPSS. Response options were coded between 1 and 5 (Strongly Agree = 5, Agree = 4, Undecided/Unknown = 3, Disagree = 2, and Strongly Disagree = 1). An average score of 4 or higher (i.e., Likert ratings that correspond with agree or strongly agree) would indicate support for hypothesis 2. To test the second hypothesis, a one tailed one sample t-test ($\alpha = .05$) was run in SPSS to compare the mean of the sample from the survey ($M = 3.76$) to the expected mean ($M = 4$). Results indicated that the mean of the sample group did not differ from the expected mean; $t = -3.40, p = .001$. These results do not lend support to the hypothesis that nurses will report younger populations as having more medically unexplained symptoms than older populations.

The four questions also provided some qualitative information. A total of 26 responses were recorded across the 4 different questions. These questions were used to gather some qualitative data on whether school nurses saw more younger students in their office, if younger students reported more medically unexplained symptoms (MUS) than older students, if younger students found it harder to explain why they felt sick, and if students with MUS complaints visited more often than students without MUS complaints.

Of those that responded, 48.6% indicated they agree, and 10.8% indicated they strongly agree with the statement, "I find that younger students find it harder to explain

why they feel sick than older students.” Additionally, 51.4% of respondents agreed and 16.2% of respondents strongly agreed with the statement, “Most of the students with somatization or medically unexplained symptom complaints visit my office on a more regular basis than students without these complaints.” This suggests that younger students have difficulty explaining the cause of their symptoms to nurses and that students with MUS visit more frequently than students without MUS. See Appendix D, Table D2 for the response rate of the 4 questions in this hypothesis.

Hypothesis 3. Lastly, it was hypothesized that nurses will report that they are trained in identifying Medically Unexplained Symptoms (MUS). Cronbach’s alpha was calculated using SPSS to measure the internal consistency reliability of the 4 questions on the survey that asked about whether nurses were trained in identifying MUS. Cronbach’s alpha for the 4 questions relating to hypothesis 3 was $r = 0.69$, indicating adequate reliability.

Table 4

Cronbach’s Alpha for Hypothesis 3

N of Items	Cronbach's Alpha
4	0.69

The third hypothesis was tested by again obtaining an average response across the 4 different questions using SPSS. Response options were coded between 1 and 5 (Strongly Agree = 5, Agree = 4, Undecided/Unknown = 3, Disagree = 2, and Strongly Disagree = 1). An average score of 4 or higher would indicate support for hypothesis 3. Using a one tailed one sample t-test ($\alpha = .05$) in SPSS, the mean from the sample survey

($M = 4.32$) was compared to the expected mean ($M = 4$). Results indicated that the mean of the sample group differed significantly from the expected mean, $t = 2.15, p = .98$. The results of the one sample t-test do support the hypothesis that nurses would report they are trained in identifying MUS.

Additional qualitative information was gathered from the four questions using frequency distribution tables. A total of 26 responses were recorded across the 4 different questions. Questions included in this hypothesis addressed whether school nurses were trained to recognize internalizing mental health issues (i.e., medically unexplained symptoms), the confidence nurses had in recognizing internalizing disorders, if they felt they could assist in the referral process for students with MUS, and if they were familiar with the term, “Frequent Visitor.”

Respondents agreed at a frequency of 32.4% and strongly agreed at a frequency of 27.0% that they are trained in recognizing internalizing mental health issues. Nurses who responded to the question, “I am familiar with the term “Frequent Visitor,” and have experience with these students in my office,” strongly agreed with this statement at a frequency of 48.6% and 21.6% of nurses indicating that they agree with this statement. This suggests that nurses do have some level of training and recognize that, “Frequent Visitors,” are an occurring phenomenon. See Appendix D, Table D2 for the response rate of the 4 questions in this hypothesis.

Additional Information. An additional eight items were included on the survey in order to understand more about the school nurse’s role in interacting with students who complain of medically unexplained symptoms. Using the Qualtrics XM Crosstab feature, contingency tables were created for six of the eight questions to display the frequency of

responses in percentages by the overall total of school nurse respondents and by the different level of school nurses. The last two questions were analyzed using a frequency distribution in order to see how nurses responded individually to each question.

For the first question, nurses indicated that on average students with Medically Unexplained Symptoms (MUS) stay about 5-10 minutes in their office. This suggests that students with MUS spend at least 5-10 minutes in the school nurse's office which means they might be missing instruction time while they are out of the classroom. See Table 5 for a summary of the average frequency of responses from school nurses regarding the amount of time a student with MUS spends in their office.

Table 5

Total Time Spent in Nurses Office

Time	Overall Total	Elementary School	Middle School	High School	Other
5-10 Minutes	43.3%	41.7%	42.9%	16.7%	80.0%
11-15 Minutes	26.7%	33.3%	28.6%	33.3%	0.0%
16-20 Minutes	16.7%	16.7%	14.3%	33.3%	0.0%
21-25 Minutes	0.0%	0.0%	0.0%	0.0%	0.0%
26+ Minutes	0.0%	0.0%	0.0%	0.0%	0.0%

Of the nurses who responded, 33.3% indicated that school nurses see at least eight or more students a week who complain of MUS. This suggests that school nurses might see at least one or more student's a week who complain of MUS, with some nurses seeing as many as eight students a week. See Table 6 for the frequency distribution of responses from school nurses regarding the number of students with MUS who visit their office.

Table 6
Number of Students with MUS Who Visit the Nurse

Number of Students	Overall Total	Elementary School	Middle School	High School	Other
1 student a week	3.3%	0.0%	14.3%	0.0%	0.0%
2-3 students a week	30.0%	16.7%	42.9%	50.0%	20.0%
4-5 students a week	10.0%	0.0%	14.3%	16.7%	20.0%
6-7 students a week	10.0%	16.7%	14.3%	0.0%	0.0%
8+ Students a week	33.3%	58.3%	0.0%	16.7%	40.0%

Of the nurses who responded, 56.7% indicated that parents are called once a week for one to two students who complain of MUS. See Table 7 for the frequency distribution regarding how many parents are called for students with MUS. In addition to calling home, 60.0% of nurses frequently endorsed that at least one to two students who complain of MUS are picked up from school on a weekly basis. See Table 8 for the frequency distribution of responses regarding how many students with MUS are picked up from school.

Table 7
Number of Students with MUS Whose Parents Are Called

Number of Students	Overall Total	Elementary School	Middle School	High School	Other
1-2 Students a week	56.7%	50.0%	71.4%	50.0%	60.0%
3-4 Students a week	6.7%	8.3%	14.3%	0.0%	0.0%
5-6 Students a week	0.0%	0.0%	0.0%	0.0%	0.0%
6+ Students a week	6.7%	0.0%	0.0%	33.3%	0.0%
Never	16.7%	33.3%	0.0%	0.0%	20.0%

Table 8
Number of Students with MUS who are Picked Up From School

Number of Students	Overall Total	Elementary School	Middle School	High School	Other
1-2 Students a week	60.0%	66.7%	71.4%	33.3%	60.0%
3-4 Students a week	6.7%	0.0%	0.0%	33.3%	0.0%
5-6 Students a week	3.3%	8.3%	0.0%	0.0%	0.0%
6+ Students a week	3.3%	0.0%	0.0%	16.7%	0.0%
Never	13.3%	16.7%	14.3%	0.0%	20.0%

To better understand insights into school health and wellness and the impact these factors have on education, the following statement was asked, “I believe that students with medically unexplained symptoms or somatization miss more class/school than students without MUS.” Of the total respondents, 40.0% of school nurses agreed with this statement and 26.7% strongly agreed with this statement. See Table 9 for the frequency distribution regarding the level of agreement for the above statement.

Table 9
Level of Agreement for School Nurses Regarding Students with MUS Missing More School

Level of Agreement	Overall Total	Elementary School	Middle School	High School	Other
Agree	40.0%	33.3%	42.9%	50.0%	40.0%
Disagree	10.0%	16.7%	14.3%	0.0%	0.0%
Strongly Agree	26.7%	33.3%	28.6%	33.3%	0.0%
Strongly Disagree	3.3%	8.3%	0.0%	0.0%	0.0%
Undecided/Unknown	6.7%	0.0%	0.0%	0.0%	40.0%

The frequency response average for the level of agreement with the statement, “I believe that the staff within my school know what somatization/medically unexplained symptoms and other internalizing conditions are,” had a wide spread of endorsed items. Of those who responded, 23.3% agree, 30.0% disagree, 10.0% strongly agree, 3.3%

strongly disagree, and 20.0% marked undecided or unknown. See Table 10 for the frequency distribution regarding the level of agreement for the above statement.

Table 10
Level of Agreement for School Nurses Regarding the Knowledge of MUS for School Staff

Overall Total	Elementary School	Middle School	High School	Other
23.3%	8.3%	57.1%	33.3%	0.0%
30.0%	25.0%	0.0%	33.3%	80.0%
10.0%	8.3%	28.6%	0.0%	0.0%
3.3%	8.3%	0.0%	0.0%	0.0%
20.0%	41.7%	0.0%	16.7%	0.0%

Two fill-in-the blank responses were included in the survey to help understand more about the grade level that nurses receive the most visitors from and the grade that nurses receive the most visitors who report complaints of MUS. The grade where nurses receive the most visitors appeared to be 1st and 2nd grade students, with a frequent response average of 21.6%. The grade where nurses received the most visitors with MUS appeared to be 1st and 2nd grade as well, with a frequency response average of 17.55%. There was a high number of nurses who chose not to respond to this question, leaving a gap in the responses for these two questions. A complete summary of the frequency distribution for both questions can be found in Table 11.

Table 11

Fill in the Blank Responses for Nurses by Frequent Visitor and Visitors with MUS

Response	Frequent Visitor	Visitors with MUS
1st and 2nd	21.6%	17.55%
3rd and 4th	12.2%	12.60%
5th and 6th	10.8%	11.70%
7th and 8th	8.1%	12.15%
9th and 10th	8.1%	8.10%
11th and 12th	0.0%	0.00%
Other	5.4%	5.40%
No Response	33.8%	32.50%

CHAPTER IV

DISCUSSION

Students who present with medically unexplained symptoms (MUS) often have internalizing disorders or mental health issues that can lead to a negative life trajectory (Gresham et al., 2013). Internalizing disorders are behaviors that are typically manifested in ways that often go unnoticed meaning these students go without targeted treatment or support (Lane et al., 2012; Liu et al., 2011). Internalizing disorders have been correlated with school dropout, low academic achievement, and chronic absenteeism (Ackerman et al., 2007; Grills-Taquechel et al., 2013; Hughes et al., 2008; Saps et al., 2009; Zolog et al., 2011). With accurate early identification and interventions, students who have internalizing disorders like MUS can be provided with support which can aid in decreasing negative life trajectories (Gresham et al., 2013; Kilgus et al., 2015).

The Multi-Tiered System of Support (MTSS) is central to the identification of students who have difficulties in school (Kilgus et al., 2015). The MTSS is recommended by both the National Association of School Psychologists (2015) as well as Gresham et al. (2013). The MTSS is a system process that is more likely to identify children who experiences difficulties with social-emotional or behavioral disorders who may qualify for services provided under the special education category of Emotional Disturbance (ED; Gresham et al., 2013). When implemented correctly, the MTSS should provide support for academics, behavior, and social-emotional functioning to all students at differing levels of intensity (Kilgus et al., 2015). The MTSS utilizes universal screeners to assist in identifying students who need support (Kilgus et al., 2015). Universal screeners, however, are not perfect. Universal screeners may miss certain

students who may have needed support. Students could be missed due to confusing wording on the screener that lead to misleading results, the time the screener was distributed, or the screener requires a minimum grade level for readability (Grills-Taquechel et al., 2013; Hughes et al., 2008; Vasey, 1993; White & Hudson, 2016). School nurses could be an asset to the school as an additional way for identifying students with internalizing disorders. School nurses are already part of the school faculty, they are trained in mental health care, and they often see students who have internalizing disorders (Bohnenkamp et al., 2015; Shannon et al., 2010; NASN, 2018).

The primary aim of the current study was to understand more about the school nurses' role in the handling and identification of students with somatization. A survey was created by me through the Qualtrics XM program and sent through different online avenues of communication. Data was analyzed in SPSS to obtain average scores and conduct the one tailed one sample t-test across the questions included in each hypothesis. Contingency tables and frequency distributions were created through the Qualtrics XM.

Respondents to the current survey reported a minimal level of involvement in MTSS similar to what was predicted. While this finding supports my hypothesis, it is not possible to know whether this involvement is widespread or limited to a narrow group of nurses. School psychologists should attempt to include school nurses within the MTSS in every school district as they could be a valuable member on a school support team. As stated above, the National Association of School Psychologists (NASP) neglect to mention school nurses as part of their support team despite the National Association of School Nurses (NASN; 2018) indicating that they are trained in the identification and handling of students with mental health difficulties.

It is interesting to note that two of the questions included in the testing of the first hypothesis had a response option of, “Does Not Apply.” Both of these survey questions contained statements regarding the distribution of school wide surveys to help identify students with internalizing disorders. In each question, a portion of respondents marked, “Does Not Apply,” indicating a possibility that their school does not use a school wide survey, or neither themselves nor their head nurse had been part of the process in choosing a questionnaire to screen for mental health issues. According to Bohnenkamp, Stephen and Bobo (2015), school nurses are often overlooked when creating support teams for mental health and staff education. All schools should provide a school-wide screener for mental health issues since there is a pool of research that supports the correlation between internalizing disorders and negative life trajectories (Ackerman et al., 2007; Gresham et al., 2013; Grills-Taquechel et al., 2013; Hughes et al., 2008; Saps et al., 2009; Zolog et al., 2011).

While my results are only a small sample of nurses, respondents indicated they see students from all grade levels reporting to their office with medically unexplained symptoms (MUS) which is contradictory to findings in current research. Existing research supports the idea that internalizing problems are more difficult for younger students to express, which is why they are more likely to report to the nurse’s office with MUS (Hughes et al., 2008; Shannon et al., 2010). Research indicates that internalizing problems may cause bodily stress which could result in students who visit the nurse’s office with somatic complaints (Hughes et al., 2008; Razali, 2017; Shannon et al., 2010). Students who are younger may find it difficult to express their anxiety, depression, or mental state and these feelings manifest as headaches, tummy aches, and nausea (Hughes

et al., 2008). The first place these students are likely to go with these complaints is the school nurse office. Regardless of age, if a school nurse sees the student frequently, they would likely have some insight or understanding into mental health and can assist in the referral process for that student to receive the support that would hopefully alleviate their symptoms.

Lastly, respondents indicate that they are trained in identifying medically unexplained symptoms (MUS). This supports existing research that school nurses are trained in identifying mental health issues and could provide additional support if placed on a school support team (Bohnenkamp et al., 2015; NASN, 2018). School nurses could serve as a valuable member on school support teams to help in creating the MTSS referral and intervention process as they are trained in identifying students with MUS. When students have internalizing difficulties that go unnoticed, they are likely to miss more school, more class time, and have difficulties maintaining friendships (Gresham et al., 2013). When students are identified and provided appropriate interventions the chance for negative life outcomes decreases (Gresham et al., 2013). School nurses could be a part of the identification and referral process as they might help in identifying students who may have otherwise gone unidentified.

The survey also consisted of eight additional questions to understand more about how long students might miss class, how many students with MUS might visit the office, and how frequently they visit. Respondents indicated that some students who complain of MUS do leave school which could possibly contribute to frequent absenteeism and suggests that these students might miss valuable academic learning time. Moreover, nurses believed that students who have MUS are more likely to miss school than those of

their peers without MUS. Any time that a student is not in their classroom, they are likely missing instruction time that can lead to gaps in their learning.

Additionally, some respondents indicated that there are schools where faculty or staff do not know what medically unexplained symptoms or internalizing conditions are. Without an appropriate screener for children under the age of 8, those students with internalizing disorders are more likely to not be identified or receive the support they need to be successful in school. School faculty and staff should be educated on internalizing conditions such as somatization in order to be better informed for students who present with MUS. Students who present with MUS would likely benefit from some sort of intervention. If staff are educated and trained in identifying these symptoms, then more students may be referred for interventions which may help decrease frequent absenteeism that might lead to poorer academic performance. It is important for schools to continue to address medically unexplained symptoms, internalizing disorders, and other disorders as they are shown to correlate with poor academic performance, social isolation, and a negative life trajectory (Ackerman et al., 2007; Gresham, 2003; Grills-Taquechel et al., 2013; Hughes et al., 2008; Saps et al., 2009; Zolog et al., 2011).

Limitations of the study

Several limitations exist within this study that likely impacted the findings. Future studies would likely benefit from addressing these limitations. The biggest limitation of the study is the small sample size of respondents for the survey. Only 27 participants responded to the survey in its entirety, and a larger sample size would have been more reflective of the population and would have added to the validity of the results. There were several factors to consider that might have contributed to the low number of

participants. One possible factor that contributed to the low number of participants might have been the avenues that the survey was distributed. The survey was only distributed through three forms of online communication: a posting on the National Association of School Nurses (NASN) Facebook page, emails sent to school nurses in the Tooele County School District, and an email sent through the Middle Tennessee State University School Psychology Listserv. Additional avenues of distribution, such as different social media outlets and emails to other school districts might have assisted in obtaining more participants.

Another factor that was previously mentioned which affected the sample size of participants in the study was the length of the survey. A total of 39 participants started the survey but only 27 participants completed the survey in its entirety. The survey length (34 questions, not including demographic data) might have led to high participant attrition rates. Participants had little stake or reason to complete the survey. The addition of an incentive might be beneficial for retention of participants and increasing the number of participants who respond. Future research might also benefit from adjusting the current survey to make it more concise and shorter in length to help combat this limitation.

The time of year was another possible limitation that affected response rates. The survey was published and distributed towards the end of the calendar year, which naturally is a busy time for most people. Despite distributing the survey several times to the NASN Facebook page, the total responses from participants remained low. Due to time constraints and extraneous variables, there was also not much time to wait for additional respondents.

Another final limitation in this research study was that one of the three Cronbach's alpha's that were obtained for the study were considered questionable. Scores obtained for the second hypothesis was considered to have questionable reliability. Future research should consider adjusting the existing survey questions included in the second hypothesis to ensure that those items all measure the same construct.

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APPENDICES

APPENDIX A
Survey

Please select from the following options:

1. I am a School Nurse at a(n):
 - Elementary School
 - Middle School
 - High School
 - Other: (Please fill in your answer)
2. Approximately how long have you been practicing as a school nurse:
 - 1-5 Years
 - 6-10 Years
 - 11-15 Years
 - 15-20 Years
 - 21+ Years

Hypothesis 1: It is hypothesized that school nurses will report a minimal level of involvement on school support teams within the Multi-Tiered System of Services.

3. I have been asked for consultation to assist in determining if a student has an internalizing health issue, such as somatization or medically unexplained symptoms, by a teacher or other school staff.
 - a. Strongly Disagree
 - b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree
4. I have previously raised concern about a student to the school psychologist or school counselor due to my belief that they might be in need of additional supports.
 - a. Strongly Disagree
 - b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree
5. If I had raised a concern about a student, the school psychologist or school staff have followed up with the student.
 - a. Strongly Disagree
 - b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree
 - f. Does not apply

6. I have previously participated on an Individualized Education Plan (IEP) team that was for a student who was *not* classified as Other Health Impairment.
 - a. Strongly Disagree
 - b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree

7. Most Individualized Education Plan (IEP) meetings I have attended were for students who were classified as Other Health Impairment.
 - a. Strongly Disagree
 - b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree

8. I regularly talk with a student's teacher if the student visits my office with medically unexplained symptoms or somatization.
 - a. Strongly Disagree
 - b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree

9. The school psychologist or school counselor has consulted with me regarding students who visit my office with medically unexplained symptoms or somatization.
 - a. Strongly Disagree
 - b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree

10. Other school staff have approached me to discuss a student who visits my office with medically unexplained symptoms or somatization.
 - a. Strongly Disagree
 - b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree

11. I have provided consultation or training to teachers to help them better understand and recognize somatization or medically unexplained symptoms in students.
 - a. Strongly Disagree

- b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree
12. I have participated in groups or activities that represent a Tier 2 level of service within my school.
- a. Strongly Disagree
 - b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree
13. I have worked individually with students to help educate them and help them understand somatization or medically unexplained symptoms. For example, I have explained the relationship between stress and “tummy aches” or “headaches” to students.
- a. Strongly Disagree
 - b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree
14. My head nurse/or myself have been part of the process in choosing a questionnaire that helps screen students for mental health issues such as somatization or medically unexplained symptoms.
- a. Strongly Disagree
 - b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree
 - f. Does not apply because our school does not screen all students.
15. I feel that I am part of a team in the Multi-Tiered System of Support within my school.
- a. Strongly Disagree
 - b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree
16. I feel that I am more of a lone ranger within my school and most of my support comes from my head nurse or other school nurses.
- a. Strongly Disagree
 - b. Disagree

- c. Undecided/Unknown
- d. Agree
- e. Strongly Agree

17. I administer my own questionnaire or a questionnaire provided by the school to students I suspect of having an internalizing disorder.

- a. Strongly Disagree
- b. Disagree
- c. Undecided/Unknown
- d. Agree
- e. Strongly Agree
- f. Does Not Apply

18. My school provides a school wide survey given to all students to help identify students with mental health issues.

- a. Strongly Disagree
- b. Disagree
- c. Undecided/Unknown
- d. Agree
- e. Strongly Agree
- f. Does Not Apply

Hypothesis 2: It is hypothesized that nurses will report younger populations as having more medically unexplained symptoms than older populations.

19. I typically see more younger students in my office with medically unexplained symptoms or somatization than older students.

- a. Strongly Disagree
- b. Disagree
- c. Undecided/Unknown
- d. Agree
- e. Strongly Agree

20. Younger students who visit my office report more medically unexplained symptoms or somatization than older students.

- a. Strongly Disagree
- b. Disagree
- c. Undecided/Unknown
- d. Agree
- e. Strongly Agree

21. I find that younger students find it harder to explain why they feel sick than older students.

- a. Strongly Disagree
- b. Disagree
- c. Undecided/Unknown

- d. Agree
 - e. Strongly Agree
22. Most of the students with a somatization or medically unexplained symptom complaint visit my office on a more regular basis than students without these complaints.
- a. Strongly Disagree
 - b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree

Hypothesis 3: It is hypothesized that nurses will report that they are adequately trained in identifying Medically Unexplained Symptoms (MUS).

23. I am trained to recognize internalizing mental health issues (behaviors that are manifested inwardly in psychological and emotional states such as anxiety or depression) in children.
- a. Strongly Disagree
 - b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree
24. I am confident in my ability to recognize internalizing disorders in children.
- a. Strongly Disagree
 - b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree
25. I feel that I could assist in the identification and referral process for students who present with internalizing disorders.
- a. Strongly Disagree
 - b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree
26. I am familiar with the term “Frequent Visitor,” and have experience with these students in my office.
- a. Strongly Disagree
 - b. Disagree
 - c. Undecided/Unknown
 - d. Agree
 - e. Strongly Agree

Additional Information:

27. How long does a student with medically unexplained symptoms or somatization stay in your office?
- 5-10 Minutes
 - 11-15 Minutes
 - 16-20 Minutes
 - 21-25 Minutes
 - 26+ Minutes
28. About how often do you have students with medically unexplained symptoms or somatization (e.g., tummy aches, headaches, drowsiness) come into your office?
- 1 student a week
 - 2-3 students a week
 - 4-5 students a week
 - 6-7 students a week
 - 8+ Students a week
29. How often do you call the students parent/guardian and request that they come pick their child up from school if that child complains of medically unexplained symptoms or somatization?
- Never
 - 1-2 Students a week
 - 3-4 Students a week
 - 5-6 Students a week
 - 6+ Students a week
30. How often is a student with medically unexplained symptoms or somatization complaints picked up from school?
- Never
 - 1-2 Students a week
 - 3-4 Students a week
 - 5-6 Students a week
 - 6+ Students a week
31. I believe that students with medically unexplained symptoms or somatization miss more class/school than students without MUS.
- Strongly Disagree
 - Disagree
 - Undecided/Unknown
 - Agree
 - Strongly Agree
32. I believe that the staff within my school know what somatization/medically unexplained symptoms and other internalizing conditions are.

- a. Strongly Disagree
- b. Disagree
- c. Undecided/Unknown
- d. Agree
- e. Strongly Agree

33. What grade would you say you receive the most visitors from?

- Please fill in your answer: _____

34. What grade would you say you receive the most Medically Unexplained Symptoms (MUS) complaints from?

- Please fill in your answer: _____

APPENDIX B
Online Informed Consent Page

Primary Investigator: Victoria Kepler

PI Department & College: Psychology, College of Health and Behavioral Sciences

Faculty Advisor (if PI is a student): Monica Wallace

Protocol Title: The School Nurse's Role in the Identification and Handling of Somatization in Students

Protocol ID: 20-1063

Approval Date: 11/01/2019

Expiration

Date: 08/31/2020

Information and Disclosure Section

1. **Purpose:** The purpose of the current study is to understand in particular about how nurses work with students who present somatic complaints and about school nurses' involvement in school wide multi-tiered system of supports.
 - **Description:** Survey school nurses to better understand their role in handling of students with somatic complaints and participation in delivering intervention services to students. Once the survey is completed. The results of the survey will include no identifying information and will be collected by the researchers. Researchers will use the unidentified data to test the study hypotheses.
2. **Duration:** The whole activity should take about 20 minutes. There is no compensation for participation. The participants must at least take 34 questions regarding school nursing.
3. **Here are your rights as a participant:**
 - Your participation in this research is voluntary.
 - You may skip any item that you don't want to answer, and you may stop the experiment at any time (but see the note below)
 - If you leave an item blank by either not clicking or entering a response, you may be warned that you missed one, just in case it was an accident. But you can continue the study without entering a response if you didn't want to answer any questions.
 - Some items may require a response to accurately present the survey.
4. **Risks & Discomforts:** Participants will experience "minimal risk" or "little to no risk." Participants are asked to answer straightforward questions about their job and their level of training in relation to Medically Unexplained Symptoms (MUS). No discomfort or harm is anticipated through the answering of the questions on the survey.

5. **Benefits:** There are no direct benefits to the participants in this study. Nonetheless, results may provide guidance in planning and implementing school support services for students.
6. **Identifiable Information:** You will NOT be asked to provide identifiable personal information.
7. **Compensation: There is no compensation for participating in this study.**
8. **Confidentiality.** All efforts, within reason, will be made to keep the personal information private but total privacy cannot be promised. Your information may be shared with MTSU or the government, such as the Middle Tennessee State University Institutional Review Board, Federal Government Office for Human Research Protections, *if* you or someone else is in danger or if we are required to do so by law.
9. **Contact Information.** If you should have any questions about this research study or possible injury, please feel free to contact Victoria Kepler by telephone (435)-833-1900 Ext. 1993 or by email vmk2f@mtmail.mtsu.edu OR my faculty advisor, Monica Wallace, at monica.wallace@mtsu.edu or by telephone at (615)-898-2165. You can also contact the MTSU Office of compliance via telephone (615 494 8918) or by email (compliance@mtsu.edu). This contact information will be presented again at the end of the experiment.

Participant Response Section

- No Yes I have read this informed consent document pertaining to the above identified research
- No Yes The research procedures to be conducted are clear to me
- No Yes I confirm I am 18 years or older
- No Yes I am aware of the potential risks of the study

By clicking below, I affirm that I freely and voluntarily choose to participate in this study. I understand I can withdraw from this study at any time without facing any consequences.

- NO I do not consent
- Yes I consent

APPENDIX C
Recruitment Email

Primary Investigator: Victoria Kepler

PI Department & College: Psychology Department, **College, Middle Tennessee State University**

Faculty Advisor (if PI is a student): Monica A. Wallace

Protocol Title: The School Nurse's Role in the Identification and Handling of Somatization in Students

Protocol ID: 20-1063

Approval Date: 11/1/2019 **Expiration Date:** 8/31/2020

Dear School Psychology Faculty and Alumni and Current Students,

Introductory paragraph and other custom details (optional): My name is Victoria Kepler, and I am a master's student in the school psychology program at Middle Tennessee State University. I am conducting my thesis research on the school nurse's role in the identification and handling of students who present with somatic complaints. I am writing to ask for your assistance in reaching school nurses who are eligible to complete a 20-minute, anonymous Qualtrics survey that has been approved by the Middle Tennessee State University Institutional Review Board.

I would greatly appreciate you taking the time to forward this invitation to any school nurses you may know of who may not have received this message. If you have any questions, please feel free to contact me at vmk2f@mtmail.mtsu.edu

Access the study (and the consent form with more information) here:

Study Description & Purpose – Survey school nurses to better understand their role in handling of students with somatic complaints and participation in delivering intervention services to students.

Target Participant Pool – Persons currently working full or part time as school nurses in a public school setting.

Risks & Discomforts – There is little to no risk for participating in this study and it should not cause any discomfort.

Benefits – There are not direct benefits to the participants. Nonetheless, results may provide guidance in planning and implementing school support services for students.

Additional Information – The survey will take about 20-minutes to complete. You may withdraw your consent at any time. If you do not wish to answer a question, you may skip that question by providing no response.

Compensation – Participants will not receive any compensation for participating in this study.

Contact Information – If you should have any questions about this research study or possible injury, please feel free to contact Victoria Kepler by telephone (435)-833-1900 Ext. 1993 or by email vmk2f@mtmail.mtsu.edu OR my faculty advisor, Monica Wallace, at monica.wallace@mtsu.edu or by telephone at (615)-898-2165.

Please enter the survey by clicking the link in the bottom of the email. You will be given a chance to read the entire informed consent to assist you make a final determination (if using a Qualtrics Survey).

Concluding paragraph(s) (optional): Thank you so much for your assistance.

Yours Sincerely,

Victoria Kepler

Qualtrics link for Survey –

https://mtsu.ca1.qualtrics.com/jfe/form/SV_cTs9SyB9XAgAHat (if applicable)

APPENDIX D

Frequency and Contingency Tables

Table D1

Average Response for Questions Regarding Whether Nurses are Part of the MTSS

Question	Response Frequency					
	Strongly Agree	Agree	Undecided/ Unknown	Disagree	Strongly Disagree	Does Not Apply
I have been asked for consultation to assist in determining if a student has an internalizing health issue, such as somatization or medically unexplained symptoms, by a teacher or other school staff.	21.6%	37.8%	5.4%	8.1%	0.0%	
I have previously raised concern about a student to the school psychologist or school counselor due to my belief that they might be in need of additional supports.	32.4%	29.7%	5.4%	2.7%	2.7%	
If I had raised a concern about a student, the school psychologist or school staff have followed up with the student.	27.0%	35.1%	8.1%	2.7%	0.0%	
I have previously participated on an Individualized Education Plan (IEP) team that was for a student who was <i>not</i> classified as Other Health Impairment.	10.8%	35.1%	5.4%	13.5%	8.1%	
Most Individualized Education Plan (IEP) meetings I have attended were for students who were classified as Other Health Impairment.	16.2%	29.7%	8.1%	13.5%	5.4%	
I regularly talk with a student's teacher if the student visits my office with medically unexplained symptoms or somatization.	16.2%	35.1%	2.7%	13.5%	5.4%	
The school psychologist or school counselor has consulted with me regarding students who visit my office with medically unexplained symptoms or somatization.	13.5%	32.4%	0.0%	16.2%	8.1%	
Other school staff have approached me to discuss a student who visits my office with medically unexplained symptoms or somatization.	10.8%	32.4%	2.7%	21.6%	2.7%	
I have provided consultation or training to teachers to help them better understand and recognize somatization or medically unexplained symptoms in students.	10.8%	29.7%	10.8%	16.2%	2.7%	
I have participated in groups or activities that represent a Tier 2 level of service within my school.	13.5%	5.4%	18.9%	16.2%	13.5%	
I have worked individually with students to help educate them and help them understand somatization or medically unexplained symptoms. For example, I have explained the relationship between stress and "tummy aches" or "headaches" to students.	35.1%	32.4%	0.0%	0.0%	2.7%	
My head nurse/or myself have been part of the process in choosing a questionnaire that helps screen students for mental health issues such as somatization or medically unexplained symptoms.	2.7%	13.5%	0.0%	16.2%	16.2%	21.6%
I feel that I am part of a team in the Multi-Tiered System of Support within my school.	21.6%	18.9%	8.1%	21.6%	0.0%	
I feel that I am more of a lone ranger within my school and most of my support comes from my head nurse or other school nurses.	5.4%	24.3%	2.7%	21.6%	16.2%	
I administer my own questionnaire or a questionnaire provided by the school to students I suspect of having an internalizing disorder.	8.1%	16.2%	2.7%	13.5%	18.9%	
My school provides a school wide survey given to all students to help identify students with mental health issues.	13.5%	10.8%	10.8%	24.3%	0.0%	10.8%

Note. Of the total number of respondents, 10 did not answer these questions and therefore their responses were not recorded.

Table D2
Average Response for Questions Regarding Younger Populations as Having More Medically Unexplained Symptoms

Question	Response Frequency				
	Strongly Agree	Agree	Undecided /Unknown	Disagree	Strongly Disagree
I typically see more younger students in my office with medically unexplained symptoms or somatization than older students.	18.9%	24.3%	2.7%	24.3%	18.9%
Younger students who visit my office report more medically unexplained symptoms or somatization than older students.	13.5%	29.7%	0.0%	24.3%	2.7%
I find that younger students find it harder to explain why they feel sick than older students.	10.8%	48.6%	8.1%	2.7%	0.0%
Most of the students with a somatization or medically unexplained symptom complaint visit my office on a more regular basis than students without these complaints.	16.2%	51.4%	0.0%	2.7%	0.0%

Note. Of the total number of respondents, 11 did not answer these questions and therefore their responses were not recorded.

Table D3
Average Response for Nurses Regarding Training to Identify MUS

Question	Response Frequency				
	Strongly Agree	Agree	Undecided /Unknown	Disagree	Strongly Disagree
I am trained to recognize internalizing mental health issues (behaviors that are manifested inwardly in psychological and emotional states such as anxiety or depression) in children.	27.0%	32.4%	2.7%	8.1%	0.0%
I am confident in my ability to recognize internalizing disorders in children.	29.7%	32.4%	5.4%	2.7%	0.0%
I feel that I could assist in the identification and referral process for students who present with internalizing disorders.	24.3%	40.5%	2.7%	0.0%	2.7%
I am familiar with the term "Frequent Visitor," and have experience with these students in my office.	48.6%	21.6%	0.0%	0.0%	0.0%

Note. Of the total number of respondents, 11 did not answer these questions and therefore their responses were not recorded.

APPENDIX E
IRB Approval Letter

IRB
INSTITUTIONAL REVIEW BOARD
Office of Research Compliance,
010A Sam Ingram Building,
2269 Middle Tennessee Blvd
Murfreesboro, TN 37129



IRBN007 – EXEMPTION DETERMINATION NOTICE

Thursday, November 21, 2019

Principal Investigator **Victoria Kepler (Student)**
Faculty Advisor **Monica Wallace**
Co-Investigators **NONE**
Investigator Email(s) **vmk2f@mtmail.mtsu.edu; monica.wallace@mtsu.edu**
Department **Psychology**

Protocol Title ***The school nurse's role in the identification and handling of somatization in students***
Protocol ID **20-1063**

Dear Investigator(s),

The above identified research proposal has been reviewed by the MTSU Institutional Review Board (IRB) through the EXEMPT review mechanism under 45 CFR 46.101(b)(2) within the research category (1) *Educational Settings & Instructional Strategies and medical devices*. A summary of the IRB action and other particulars in regard to this protocol application is tabulated as shown below:

IRB Action	EXEMPT from further IRB review***	Date	11/21/19
Date of Expiration	7/31/2020		
Sample Size	100 (ONE HUNDRED)		
Participant Pool	Adults (18 years or older) - School nurses		
Exceptions	1. Online informed consent permitted. 2. Approved to collect data over the internet via Qualtrics		
Mandatory Restrictions	1. Participants must be 18 years or older 2. Informed consent must be obtained from the participants 3. Identifying information must not be collected		
Restrictions	1. All restrictions for exemption apply. 2. Mandatory active informed consent. 3. Mandatory Final Report (next page)		
Approved IRB Templates	IRB Online Informed Consent and Email script		
Funding	NONE		
Comments	NONE		

***Although this exemption determination allows above defined protocol from further IRB review, such as continuing review, MTSU IRB will continue to give regulatory oversight to ensure compliance.