

Examining the Relationship Between Socioeconomic Status and Mental Health Needs
and Treatment in an Urban, Suburban, and Rural Middle School Community Context

By

Brenda M. Walker

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The members of the Committee approve the thesis of

Brenda Walker presented on April 30, 2021.

Dr. Mary Beth Tusing, Chair

Dr. Michael Axelrod

Dr. Rosemary Battalio

APPROVED: _____
Dean of Graduate Studies

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ABSTRACT

Student mental health needs are on the rise (Department of Education, 2019; Centers for Disease Control and Prevention, 2016). The differences in rates of student of mental health needs and differences in barriers to treatment are influenced by many factors including, socioeconomic status, family factors, and community factors. Merikangas and colleagues (2010) found that fewer than half of adolescents with a mental health disorder received any sort of treatment. School psychologists are in a unique position to address student mental health (NASP, 2020). This study was conducted to further the understanding of how community context and socioeconomic status may influence student mental health need and treatment. Survey responses from 8th grade, middle school students in rural, suburban, and urban districts within Minnesota considered for this study were retrieved from the 2019 Minnesota Student Survey (Minnesota Department of Education, 2019). Survey responses were compared to determine differences in frequencies of responses based on school of enrollment between student

self-reported mental health, behavioral, or emotional problems and their self-reported rates of obtaining treatment for mental health concerns within each school. Then, analysis explored whether results differed when student socioeconomic backgrounds were considered. Overall, the study identified that student indicated mental health need was most significant in the rural setting when considering all students, and when considering students of lower socioeconomic status. Findings for student indicated mental health treatment were not significantly different across settings, when all student responses were considered, but did indicate a significant difference for rural students using mental treatment, when looking only at students of lower socioeconomic status. Research is needed to inform school psychologists to better identify gaps between mental health need and treatment in different community settings. Continued research can help identify unmet mental need and allow for effective collaboration with community mental health resources.

Mary Beth Tusing, PhD, NCSP

Date

DEDICATION

This thesis work is dedicated to my advisor, Dr. Mary Beth Tusing. Her dedication to the field of school psychology and her unwavering support and guidance, mean more to me than I can express. Dr. Tusing, I am truly thankful not only for your knowledge, but also for your kindness.

This is also dedicated to my dad. While I was young, he took the leap as a non-traditional student and studied architecture. He understood I earned my undergraduate degree with the intention of attending graduate school to become a school psychologist. Prior to attending graduate school, I worried about the expense, and the move it would require. He said not going would be like building the house and then not putting the door on. Dad, thank you for your encouragement. I finally have my door.

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CHAPTER I

INTRODUCTION

Statement of the Problem

Mental health needs among youth are on the rise. The increased need, as reflected by national and state data, begs to be addressed. In the United States, one in five children experience a mental health disorder. The most commonly diagnosed mental disorders in children include Attention-Deficit Hyperactivity Disorder (ADHD), behavior problems, anxiety, and depression (Centers for Disease Control and Prevention, 2020). Statewide trends for Minnesota are consistent with national trends. Results from the 2019 Minnesota Student Survey indicate that 23% of students surveyed reported struggling with mental health, behavior, or emotional problems. This data represents an increase of eight percent from the 2016 survey results. Furthermore, female students completing the 2019 survey indicated mental health needs at a rate nearly twice that of male students (Minnesota Department of Education, 2019). At the same time mental health needs are increasing, research suggests limited to no access to mental health services is an increasing reality for many families. Only 20% of children with mental, emotional, or behavioral disorders receive specialized mental health care (Centers for Disease Control and Prevention, 2020). In a nationally representative sample of U.S. adolescents, one in every four to five youth meets criteria for a mental health disorder with severe impairment across their lifetime. Fewer than half of adolescents with a mental health disorder received any sort of treatment (Merikangas et al., 2010).

Review of Literature

School psychologists are well-suited to guide schools and communities in the organization of resources to support students with mental health concerns. According to the National Association of School Psychologists (2020) professional standards, school psychologists are responsible for having a knowledge of risk and protective factors to address student problems, guiding mental health program development and implementation in schools, contributing to crisis prevention and response efforts, and collaborating with other health providers when supporting students and families (National Association of School Psychologists, 2020). As such, school psychologists need to integrate local data on mental health prevalence and risk factors with data on family access to mental health resources when advocating for community collaborations or school-based services. Due to the complexity of mental health risk factors and barriers to mental health services, school psychologists may need to consider all of the unique variables about the community context of their school setting and families served by the school when determining how to best support students. By having a better appreciation of how needs and access vary based on family and community factors, school psychologists are better prepared to assist students and families.

Psychologist Uri Bronfenbrenner's ecological systems theory speaks to the importance of understanding social systems and contexts in which humans develop (Whitcomb & Merrell, 2013). The premise of the theory is that every child exists within multiple systems (i.e., ecologies) and each system may play a key role in their development. The sphere of influence plays out at every level in adolescent development. An adolescent's immediate environment of family, school classroom, and the immediate neighborhood in which they reside are considered the most proximal systems in their life

(e.g., microsystem). The interactions adolescents have with the people in their immediate environment (e.g., mesosystem) and the school system outside of the classroom, the type of community in which the adolescent lives (e.g., ecosystem) can influence development. An adolescent raised in an area with exposure to trauma, poverty, and discrimination may develop differently than a child raised in an environment where fewer of these factors exist. The outermost level of the model (e.g., macrosystem) includes the general values, beliefs, customs, and resources of the society in which the adolescent lives. These overriding societal beliefs, customs, and resources may influence identification of mental health needs and treatment. Ecological systems theory provides a foundation for understanding and support of adolescent behavior (Whitcomb & Merrell, 2013).

A summary of research identified a variety of potential barriers to mental health treatment. Many of the same variables associated with limited access to treatment are also risk factors for mental health problems. For example, family poverty and ethnicity are associated with higher rates of mental health needs. Poverty and ethnicity are also closely entwined with things like limited insurance coverage, poorer housing options, exposure to trauma, and limited availability of mental health services in one's community (Blackstock et al., 2018). The top four risk factors for adolescent mental health needs include exposure to poverty, trauma, discrimination, and high pressure to excel (Luthar et al., 2020). These risk factors intertwine in family and community settings and potentially impact adolescent mental health needs and access to treatment.

The following literature review summarizes research on risk factors for childhood mental health needs and factors that can serve as barriers to treatment access. The review is organized to summarize variables associated with one's family context, such as socioeconomic status, parental education, cultural beliefs, insurance access, and ethnicity,

as well as variables associated with the broader community in which the family resides, such as community income levels, housing options, and location of mental health providers. Research suggests, within all of the variables that may be intertwined for consideration, socioeconomic status plays a large role in mental health need and access to mental health treatment.

Family Factors

Low socioeconomic status, as measured by family income, has historically been a significant risk factor for increased mental health needs and limited access to treatment. Studies examining the inverse relationship between mental illness and socioeconomic status date back to 1939, when Faris and Dunham found disproportionate rates of mental illness occurred in the poorest areas of Chicago. Studies over the years have continued to reflect similar disproportionate findings (Hollingshead & Redlich, 1958). Costello and colleagues (1996) found poverty was negatively correlated with diagnoses and service use for children living in rural and urban settings. Further, regardless of which socioeconomic status indicator was used (e.g., education, income, occupation), studies of children and youth have consistently indicated significant associations between low socioeconomic status and mental health disorders, (Grueber et al., 2017; Hudson, 2005; McLaughlin et al., 2012; Rutter, 2003). Lastly, McLaughlin (2012) and colleagues found that adolescent perception of social status, where they feel they rank in the social hierarchy in comparison to others in their school, neighborhood, or community, is also strongly associated with increased mental health needs. Researchers note this association has been well documented in literature and may be more influential for adolescents than other traditional socioeconomic indicators, including family income and parental education.

In a longitudinal study by Costello and colleagues (2003) using a natural experiment, researchers examined the roles of social causation versus social selection in childhood mental health needs. The study took place in a rural community with high rates of poverty. Social causation asserts that experiencing economic hardship increases risk for mental illness, whereas social selection asserts mental illness can lead to economic hardship. The sample of children ages 9 to 13 was predominately Caucasian; however, a quarter of the respondents were American Indian. Midway through the study, 14% of the study families were lifted from poverty when their family incomes increased due to the opening of a casino on the Indian reservation, where most of American Indian families resided. In the overall sample, 53% of the families remained poor and the remaining 32% were never poor. The psychiatric symptoms of the children were compared four years prior to and four years after the opening of the casino. Researchers found that prior to the casino opening, children who were persistently poor and the previously poor children had more psychiatric symptoms than the children who were never poor. After the casino opened, the previously poor children's levels of psychiatric symptoms fell to the levels of the children who were never poor. The consistently poor remained high. The authors attributed changes in rates of behavior, including conduct and oppositional defiant disorders, to increases in income, while emotional disorders, including anxiety and depression, were less affected. The study found similar results for families for non-Indian children who moved out of poverty during the same time period.

Often associated with low socioeconomic status, research has also shown a connection between parent education level and mental health risk in children. Boe and colleagues (2012) analyzed the results from the 2006 Bergen Child Study to examine

rates of mental health problems and socioeconomic status, as determined by indicators of parent-reported family income and levels of parental education. The population-based Bergen study included children attending public, private, and special schools in Bergen, Norway. Findings indicated low-income status consistently predicted increased risk for mental health problems in children. When comparing internalizing and externalizing disorders, researchers found the education level of parents was a stronger predictor for externalizing disorders. In similar research, Bornstein and colleagues (2003) found higher maternal education levels lessen the effects of socioeconomic status on child behavioral outcomes. The authors speculate parents with higher levels of education may have greater knowledge about parenting and children's development.

Research also connects adolescent mental health outcome to the quality of the parent-child relationship. Examining mental health outcomes and the effects of parenting practices in a sample of multicultural rural youth, Smokowski and colleagues (2015), found adolescent perceptions of negative parenting (e.g., parent-adolescent conflict) were associated with higher levels of anxiety, depression, and aggression in the adolescents. In addition, lower levels of self-esteem and low levels of school satisfaction was associated with adolescent perceptions of negative parenting. In contrast, higher self-esteem, significantly less depression, increased school satisfaction, and future optimism was associated with adolescent perceptions of positive parenting. Positive parenting is described as parents providing their children with emotional support, support of education, and parent-child future orientation.

Family income and family ethnicity have also been found to be associated with the under-identification and treatment of child and adolescent mental health needs. A secondary data analysis of three nationally representative household surveys was

conducted to determine rates of mental health service use among children and adolescents and differences by ethnicity and insurance status. Researchers found that 80% of children and adolescents ages 6-17 years old with indicated mental health needs, went without treatment. Further, unmet mental health need was greater for Latino children than for white children and greater for the uninsured than for the publicly insured families.

Adolescents from ethnically diverse families with higher incomes may still experience increased risks for mental health needs (Kataoka et al., 2002). Coley and colleagues (2018) found that Caucasian students in families with high incomes reported fewer mental health needs but being from a higher-income family offered no significant benefits for Black or Hispanic teens. Further, Asian, American Indian, and multi-cultural youth in affluent families often experienced higher degrees of anxiety.

Community Factors

The community setting in which a student lives may also be associated with differences in the prevalence of mental health needs and access to mental health treatment. Research has explored community factors including aspects of the physical environment, differences in setting (i.e., rural, suburban, urban), overall levels of community income, differences in prevalence of trauma exposure, and differences in the number and type of mental health providers in communities. Like family factors, several community factors associated with increased risk for mental health challenges are also associated with barriers to treatment access.

Studies suggest risks for mental health associated with income levels are associated with the affluence of their neighborhoods and schools rather than with the affluence of the students' own families (Lund & Dearing, 2013). In addition, students

who are relatively less wealthy than their peers may suffer from “upward social comparisons” in affluent neighborhoods (Jencks & Mayer, 1990).

The structural aspects of neighborhoods were also found to affect adolescent emotional well-being. Aneshensel & Sucoff (1996) examined how structural aspects, including socioeconomic stratification and racial/ethnic segregation, shape subjective perceptions of their neighborhoods and how these perceptions relate to adolescent mental health. Researchers examined responses from 877 adolescents in Los Angeles County, measuring their perceptions of the degree to which their neighborhoods are threatening based on perceived immediate environment hazards (i.e., violent crimes, drive-by shootings, property damage, drug use and dealing, graffiti, unfair police interaction, neighborhood cleanliness) and social cohesion (i.e., living in neighborhoods in which people are socially connected to one another). Researchers found that youth from low socioeconomic status neighborhoods perceive greater hazards (e.g., crime violence, drug use, graffiti) than youth from high socioeconomic status neighborhoods. Adolescents reporting more threatening neighborhoods also reported higher rates oppositional defiant disorder, conduct disorder, symptoms of depression, and anxiety.

Community-wide low socioeconomic status is associated with poorer access to quality living conditions. Living in poor or deprived neighborhoods was associated with having more significant risks to their mental health when compared to populations living in more affluent neighborhoods (Grueber et al., 2017).

Grueber and colleagues (2017) examined literature about urban areas, globally. Researchers found community socioeconomic status, social capital, social support, and social segregation were community factors associated with increased risk for mental health needs. Social capital refers to a community network pulling together to improve

and enable the society to function effectively. Social support refers to having a caring, network of people who provide emotional support. Cities with social capital and stronger social supports may serve as a buffer to promote mental health through supportive networks. The authors hypothesized that neighborhoods offering social support are more likely to contribute to social norms and practices that support healthy lifestyles. Social segregation is defined as ethnic group membership and perceived minority status. Living in neighborhoods with ethnic segregation is associated with a greater risk of anxiety and depression. Researchers found that mental distress in migrants at the individual level was associated with community-level poverty, independent of individual socioeconomic status. The effect of poverty was more pronounced for migrant residents than for native citizens. The opposite is true for less segregated neighborhoods.

Community income levels are associated with systemic factors that can negatively influence living conditions. While living in cities potentially allows for better access to health care, employment, and education, higher rates of violence and crime in urban settings have been attributed to elevated rates of mental health need among urban youth (Grueber et al., 2017).

Similar to Grueber's findings, Rapp (2015) found associations between mental health need and neighborhood poverty. Rapp investigated individual levels of mental health need in an inner-city district of Berlin for individuals with and without minority status. Findings indicated associations between mental distress and neighborhood poverty, controlling for local ethnic composition and individual differences in income and education. The findings were more pronounced for individuals of minority status. Additional urban risk factors identified in literature include lack of green space, increased traffic noise, pollution (Seidler et al., 2016), and trauma exposure (Stockdale et al., 2007),

and are associated with increased levels of stress and aggression, increasing mental health need (Seidler et al., 2016).

In the United States, urban and suburban youth living in lower socioeconomic counties with fewer mental health specialists are also less likely to receive treatment. Cummings and colleagues (2017) examined national disparities in the types of mental health services providers located across communities of varying socioeconomic status. Specifically, researchers explored differences in access to outpatient mental health treatment as related to community income. The study included urban, suburban and rural communities. In general, there was a clear shortage of mental health providers nationally and the shortage disproportionately affected low income populations. For example, inpatient mental health treatment facilities were more prevalent in lower income communities, while having fewer outpatient services, whereas higher income communities were more likely to have more outpatient practices. Forty-three percent of the highest income communities had community-based mental health treatment available versus only 23% of the lowest income communities. More specifically, physicians specializing in mental health had offices in approximately one fourth of the highest income communities versus only eight percent of the lowest income communities. Similarly, mental health practitioners, like counselors and psychotherapists, had offices available in 35% of the highest income communities versus only 13% of the lowest income communities. According to the authors, many private-provider mental health practices are less likely to accept Medicaid or private insurance and are not accessible to those who cannot afford to pay additional costs (e.g., out-of-pocket, out-of-network). Thus, providers are more likely to locate in wealthier communities. There were also differences in resource distribution between rural, suburban, and urban communities.

Urban areas were more likely to have availability of all three types of mental health treatment providers, with the most pronounced differences for office-based practices over mental health facilities.

In a nationally representative survey of U.S. adolescents, Rudolph and colleagues (2014) sought to measure associations between neighborhood socioeconomic status and adolescent mental health and the extent to which urban and non-urban settings modified associations. Neighborhood socioeconomic status was derived from family income, educational levels of community members, occupations, and value of housing. Results showed the association between living in a low socioeconomic status community and emotional disorder was more than twice as large for adolescents living in urban areas versus non-urban areas. Adolescents in disadvantaged urban areas had a 59% increase in the likelihood of being diagnosed with an emotional disorder. Researchers speculate that living in an urban area may exacerbate the association between neighborhood socioeconomic status and emotional disorders due to a higher overall number of mental health risk factors in urban settings relative to other settings. Researchers speculate the prevalent urban risk factors may include lack of green space, residential instability, noise, and exposure to violence.

Exposure to trauma is also a risk factor for mental health challenges. Children living in neighborhoods where they feel insecure and frequently experience violence, experience more related consequences for mental health challenges due to increased trauma exposure. In particular, children of color report disproportionate rates of trauma, placing them at greater risk for mental health struggles (McKay et al., 2005). Compounding the exposure to trauma, children living in poorer neighborhoods may have more difficulty in building and sustaining supportive relationships and may have

increased susceptibility to emotional or behavioral disorders (Stockdale et al., 2007).

Students lacking in social support and social capital have less to supportive relationships which may serve as buffer to trauma exposure (Grueber et al., 2017).

Recent research has repeatedly shown that children in rural areas have the same or sometimes greater rates of mental health need when compared to children in urban areas (Polaha et al., 2011; Anderson & Gittler, 2005). Living in a rural setting is also associated with unique challenges in accessing mental health services. Similar to urban settings, family poverty and limited insurance coverage can be barriers to mental health treatment for rural families. Additional factors unique to living in a rural setting include family belief about mental health treatment (i.e., trust of health care providers, stigma, attitude), limited school support (i.e., teachers, student support services, school counselors, school psychologists), and awareness (i.e., acknowledgement that a mental health issue exists (Blackstock et al., 2018). Stigmas about mental health treatment can limit a child's access to mental health support in a number of ways. Preconceived beliefs about mental health care can create a barrier to mental health treatment in rural areas. Factors related to these beliefs include trust of mental health providers, stigma, and attitude. A review of studies suggests that stigma is tied to the nature of the community. Rural communities can be smaller and more closely knit than urban communities, increasing the fear that people within the community will gossip about who is receiving mental health treatment (Backstock et al., 2018). Community belief systems can impact the accessibility and acceptability of mental health services. As a result of this community stigma, families may be less familiar with how therapy works and what the roles of the family, child, adolescent, and mental health professionals are in the process (Smalley et al., 2010).

In addition to stigmas related to mental health problems, adolescents in rural settings face challenges of limited access to transportation and shortages of child mental health professionals (Kataoka et al., 2002, Smalley et al., 2010; Anderson & Gittler, 2005). Rural areas make up 85% of the federally designated mental health professional shortage areas (Mohatt et al., 2005). Professional services are frequently delivered by persons outside of rural communities, often affecting availability, sometimes eliminating it entirely (Cummings, 2014). The lack of trust of mental health providers may be compounded when providers are from outside the community, as rural residents may be suspicious of outsiders (Blackstock et al., 2018).

One last community factor explored in the research involves a student's school of enrollment. Many families seek to live in communities with high-ranking schools. Highachieving schools located in more affluent suburban communities are not without risks of their own. Recent major policy reports, including reports by the National Academies of Sciences, Engineering, and Medicine and the Robert Wood Johnson Foundation, have now declared youth in high-achieving schools to be part of a unique at-risk group (Luthar et al., 2019; Wallace, 2019). Luthar and colleagues (2019) examined studies of multiple high-achieving schools that were assessed between 2015 and 2019. The study comprised of 7,500 students across nine cohorts attending public high schools, boarding schools, and independent day schools. Findings showed that both male and female students across all nine schools reported elevated rates of clinically significant anxiety and depression symptoms. Self-reported symptoms of emotional disorders were 6-7 times higher than national norms. More specifically, students reported serious withdrawn-depressed and somatic symptoms at a rate 3.5-5 times that of nationally representative samples.

Addressing Mental Health Needs in School

School-based mental health services have evolved over time to play an important role in the education of students. Changes over time in school mental health services are reflective of societal changes, as society embraced new approaches to education and made developments in fields related to school mental health (Sedlak, 1997). The first psychological clinic to address students' school-related difficulties was established at the University of Pennsylvania in 1907 by Lightner Witmer (Routh, 1996). By the 1950s, mental health services had expanded considerably, as federal funding increased for special education, guidance, counseling, and social welfare services (Sedlak, 1997). In the 1970s, school-based mental health centers grew more rapidly, expanding to over 1,000 centers by the early 2000s (Weist et al., 2003). Alleyne & Pumariega (2018) examined the multiple roles of school mental health services and found that school-based mental health services can be a major source of support for children in the United States. School-based trauma-focused psychotherapy has been found to be effective. The authors hypothesized that school-based services may also serve as a bridge to connecting students and families to outside therapy. School-based mental health services can increase accessibility of care and decrease stigma associated with treatment (Becker et al., 2015). In some instances, schools are contracting with providers from the community to either serve in the school or community to provide support for services (Brown & Bolen, 2003). Engaging youth and families in the treatment process is critical to providing effective mental health services (Becker et al., 2015).

Purpose of the Study

The purpose of the current study was to examine differences across rural, suburban, and urban school districts in the rates of mental health needs and mental health

treatment of 8th grade students. The differences were further examined to determine if they varied for students from different socioeconomic backgrounds. It was hypothesized that socioeconomic status will be related to mental health needs, such that those of low socioeconomic status will have a more significant percentage of reports of mental health needs than those of high socioeconomic status. Furthermore, it was hypothesized low socioeconomic status would have a lower percentage of mental health treatment than those of higher socioeconomic status. Finally, the rate of unmet student mental health needs was hypothesized to vary by district classification, with districts with fewer community resources having more students with unmet mental health needs, regardless of personal student socioeconomic status.

Research Questions

- 1) Are there significant differences across school districts in the rates of mental health needs of students? Do the differences across school districts vary for students from different socioeconomic backgrounds?

- 2) Are there significant differences across school districts in the rates of mental health treatment of students? Do the differences across school districts vary for students from different socioeconomic backgrounds?

CHAPTER 2

METHODS

The purpose of the current study was to examine if there were significant differences across school districts in the rates of self-reported mental health needs and mental health treatment of 8th grade students in rural, suburban, and urban middle schools in Minnesota. The differences were further examined to determine if they varied for students from different socioeconomic backgrounds, as indicated by eligibility for free and reduced-price lunch. This chapter describes the methods by which community differences in mental health needs and treatment were explored.

Procedure

Given that the top four risk factors for adolescent mental health include exposure to poverty, trauma, discrimination, and high pressure to excel (Luthar et al., 2020), schools included in this analysis were from rural, suburban, and urban settings. Further, publicly available statistics were used to examine how the three communities varied on these types of factors. The communities of the school district considered varied in terms of median family incomes, percentages of individuals living below the poverty level, percentage of individuals with health insurance, and availability of mental health providers in the community (U.S. Census Bureau, 2019; Centers for Disease Control and Prevention, 2020). All three school districts were located in Minnesota. The St. Paul School District was selected as an example of a large urban school district. The Edina School District was selected to represent a suburban community. Edina was selected

because of its affluent median family income, suburban setting, and it is also the author's place of employment. The New Ulm School District was randomly selected from rural school districts that participated the Minnesota Student Survey.

All three school districts have participated in the Minnesota Student Survey since its development in 2004. Because administration of the survey and the wording of the questions was consistent across all school settings, it allowed for a comparison of uniform data on mental health factors across all school districts. The data is publicly accessible, and it can be disaggregated by district for self-report of free or reduced-price lunch for each district. No Internal Review Board permission was required for this study given that it used public data. Frequency of survey responses were retrieved on April 20, 2020. Responses from 8th grade, middle school students in rural, suburban, and urban districts within Minnesota considered represented 2019 Minnesota Student Survey results (Minnesota Department of Education, 2019).

Student responses were compared to determine differences in frequencies of responses based on school of enrollment between student self-reported mental health, behavioral, or emotional problems and their self-reported rates of obtaining treatment for mental health concerns within each school. Then, analysis explored whether results differed when student socioeconomic backgrounds were considered.

Setting and Sample

Data were from 1,708 8th grade students who completed the 2019 Minnesota Student Survey. Survey responses were considered from three middle schools. Each school represented either a rural, suburban, or urban setting in Minnesota. Survey response frequencies are reported in Table 1.

Table 1.

Frequency of Survey Responses by District Location

	Rural		Suburban		Urban	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Total Number of Surveys	122		569		1017	
<i>Gender</i>						
Male	70	57%	262	46%	494	49%
Female	52	43%	304	53%	520	51%
No Answer	0	0.0%	3	1.0%	3	0.0%
<i>Race</i>						
Amer. Indian or Alaskan Native	1	1.0%	0	0.0%	7	1.0%
Asian or Asian American	2	2.0%	65	11%	428	42%
Black or African American	1	1.0%	35	6.0%	237	23%
Hispanic or Latino	4	3.0%	11	2.0%	80	8.0%
Native Hawaiian or Other Pac. Isl.	0	0.0%	0	0.0%	2	0.0%
White	101	83%	382	67%	139	14%
Multiple Races	11	9.0%	67	12%	114	11%
No Answer	2	2.0%	9	2.0%	10	1.0%

Rural School

The rural school responses are from 122 8th grade students attending a middle school located within a rural setting in New Ulm, Minnesota. According the Minnesota Student Survey results, 57% of the respondents were male and 43% were female. The majority of the survey respondents were white (83%). Of all students completing the survey, 22.1% reported that they received free or reduced-price lunch. The remaining survey respondents reported that they either did not receive free or reduced-price lunch (59.8%) or didn't know if they did (18.0%). Of all students completing the survey, 13.2% reported they participated in special education services. The remaining respondents either reported that they did not participate in special education services (68.6%) or were unsure

(18.2%). According to data from the National Center for Education Statistics, the racial makeup of the survey respondents was comparable to the general population of New Ulm Public School District: Asian (0.6%), African American (0.9%), Hispanic (5.7%), Native Hawaiian or Other Pacific Islander (0.0%), and White (90.8%). District-wide, 31.0% of students received free or reduced-price lunch and 21.3 % participated in special education (U.S. Department of Education, Institute of Education Sciences, 2021).

According to the United States Census Bureau (2019), the median yearly income for New Ulm was \$56,288. Of its residents, 7.5% were living below the poverty level, and 4.9% were without health insurance. Data from the Behavioral Health Services in Minnesota indicates the rural setting had the highest number of family medicine physicians (42/10,000 children), but the lowest number of psychologists (25/10,000 children) compared to the other two communities (Centers for Disease Control and Prevention, 2015). Community provider details reported in Table 3.

Suburban School

The suburban school responses are from 569 8th grade students attending a middle school located within a suburban setting in Edina, Minnesota. According to the Minnesota Student Survey results, 46% of the respondents were male and 53% were female. While more diverse than the rural survey response sample, the majority of the suburban survey respondents were also white (67%). Of all students completing the survey, 5.0% of respondents reported that they received free or reduced-price lunch. The remaining survey respondents reported that they either did not receive free or reduced-price lunch (86.7%) or didn't know if they did (8.4%). Of all students completing the survey, 8.2% reported they participated in special education services. The remaining

survey respondents either reported that they did not participate in special education services (73.3%) or were unsure (18.4%).

According to data from the National Center for Education Statistics, the racial makeup of the survey respondents was comparable to the general population of Edina Public School District: American Indian or Alaskan Native (0.0%), Asian (7.0%), African American (2.0%), Hispanic (3.0%), Native Hawaiian or Other Pacific Islander (0.0%), Two or More Races (2.0%), and White (85.0%). District-wide, 8.7% of students receive free or reduced-price lunch and 10.1% participated in special education (U.S. Department of Education, Institute of Education Sciences, 2021).

According to the United States Census Bureau (2019), the median yearly income for Edina was \$99,295. Of its residents, 4.9% were living below the poverty level, and 2.2% were without health insurance. Socioeconomic factors by district location are reported in Table 2. Data from the Behavioral Health Services (Centers for Disease Control and Prevention, 2015) in Minnesota indicates the suburban and urban settings had the highest number of psychologists (25/10,000 children) and pediatricians (11.4/10,000 children), but the lowest number of family medicine physicians (42/10,000 children), compared to the rural community. Community provider details reported in Table 3.

Urban School

The urban school responses are from 1,017 8th grade students attending a middle school located within an urban setting in St. Paul, Minnesota. According to the Minnesota Student Survey results, 49% of the respondents were male and 51% were female. Of all three settings, the urban school student survey respondents were the most diverse sample, with highest percentages of respondents indicating Asian or Asian American (42%) and

Black or African American (23%). Of all students completing the survey, 62.6% reported that they received free or reduced-price lunch. The remaining survey respondents reported that they either did not receive free or reduced-price lunch (14.2%) or didn't know if they did (23.2%). Of all students completing the survey, 6.8% reported they participated in special education services. The remaining survey respondents either reported that that they did not participate special education services (56.8%) or were unsure (36.4%). According to data from the National Center for Education Statistics, the racial makeup of the survey respondents was comparable to the general population of St. Paul Public School District: American Indian or Alaskan Native (1.0%), Asian (31.0%), African American (27.0%), Hispanic (14.0%), Native Hawaiian or Other Pacific Islander (0.0%), Two or More Races (7.0%), and White (19.0%). District-wide, 70.0% of students received free or reduced-price lunch and 17.0% participated in special education (U.S. Department of Education, Institute of Education Sciences, 2021).

According to the United States Census Bureau (2019), the yearly median income for St. Paul was \$55,085. Of its residents, 19.9% were living below the poverty level, and 6.8% were without health insurance. Socioeconomic factors by district location are reported in Table 2. Data from the Behavioral Health Services (Centers for Disease Control and Prevention, 2015) in Minnesota indicates the urban and suburban settings had the highest number of psychologists (25/10,000 children), but the lowest number of family medicine physicians (42/10,000 children), compared to the rural community. Community mental health providers by district location are reported in Table 3.

Table 2.

Socioeconomic Factors by District Location

	Rural	Suburban	Urban	Entire State
	%	%	%	%
Median Income	56,288	99,295	55,085	69,411
Poverty	7.5%	4.9%	19.9%	9.6%
Without Health Insurance	4.9%	2.2%	6.8%	4.7%

Note: The socioeconomic factors by district location were obtained from the United States Census Bureau (2019).

Table 3.

Community Mental Health Providers by District Location

	Brown County Rural	Hennepin County Suburban & Urban
	<i>n</i>	<i>n</i>
Pediatricians	0.0	11.4
Psychiatrists	3.7	6.7
Family Medicine Physicians	42.0	21.2
Licensed Social Workers	31.0	39.2
Psychologists	25.6	45.8

Note: The table shows the number of providers per 10,000 children aged 0-17 years (Centers for Disease Control and Prevention, 2015).

2015).

Measures

The Minnesota Student Survey is a collaborative effort between local Minnesota schools and four state agencies, including the Minnesota Departments of Education, Health, Human Services, and Public Safety (Minnesota Department of Education, 2019). Development of survey content, monitoring of data quality, data analysis, and reporting of results was a collaborative effort between the Minnesota state agencies. The survey asks students about their behaviors, experiences, activities, and opinions. While the Minnesota Student Survey addressed several areas (e.g., school climate, bullying, emotional and mental health, relationships, substance use, connections with family and school, health and nutrition, out-of-school activities), for this study only survey questions related to socioeconomic status, mental health need, and mental health treatment were considered.

All surveys for 2019 were administered online and during school hours. Students were not required to answer every question. Participation in the survey was voluntary and responses were collected anonymously. The online survey met federal and state accessibility compliance, per the Americans with Disabilities Act, and included a text-to-speech option. The survey typically takes students 35-50 minutes to complete. Students were under no time constraints to complete the survey and it was to be completed in one sitting. No students were noted as being excluded from the opportunity to take the survey. The Minnesota Student Survey data is available for public use on the Minnesota Department of Education website. The website offers publicly available online interactive reports, allowing for data to be sorted by various variables and for the user to obtain

frequencies of responses by item, based on different demographic characteristics (Minnesota Department of Education, 2019).

In order to ensure the validity of responses, the Minnesota Student Survey removed surveys when responses were highly inconsistent, when there was a pattern of likely exaggeration, or when abnormalities in the data were detected that might interfere with validity (Minnesota Department of Education, 2019). Approximately 4% of cases were removed from the 2019 Minnesota Student Survey data. Reliability and validity statistics are not available for the survey (A. Kinney, PhD., Senior Research Scientist at the Minnesota Center for Health Statistics, Minnesota Department of Health, personal communication, January 12, 2021).

The following Minnesota Student Survey questions related to mental health need, mental health treatment, and socioeconomic status were considered for this study.

Mental Health Need

Student mental health need was defined by indicating a positive response to the following question: "Do you have any long-term mental health, behavioral or emotional problems? Long-term means lasting 6 months or more." (1) Yes, (2) No. By responding affirmatively, respondents indicated that they experienced long-term mental health, behavioral, or emotional problems.

Mental Health Treatment

Student mental health treatment was defined on the Minnesota Student Survey by the item, "Have you ever been treated for a mental health, emotional or behavioral problem? (Mark all that apply)" (1) No, (2) Yes, during the last year, and (3) Yes, more than a year ago. Only answers of "No" for mental health treatment received and

responses of “Yes, during the last year” were considered for this study. This study sought to determine the response frequencies for current mental health need and mental health treatment within the last year. Therefore, responses of, “Yes, more than a year ago”, were not included. As a result, 15.8% of rural student responses, 10.8% of suburban student responses, and 8.4% of urban student responses were not included in this study. All students completing the survey were asked if they received mental health treatment, not only the students who first indicated mental health need. The data could not identify if positive responses for mental health need were connected to the same students reporting positive responses for mental health treatment.

Socioeconomic Status

Student socioeconomic status was determined from the question, "Do you currently get free or reduced-price lunch at school?" (1) Yes, (2) No, or (3) Not Sure. Only responses of “Yes” and “No” were considered for this study. Due to survey participant anonymity, it is not possible to verify eligibility for free or reduced-price lunch for students who answered, “Not Sure”. Therefore, these responses were excluded from this study. As a result, 18% of rural student responses, 8.4% of suburban student responses, and 23.2% of urban student responses were not considered for this study.

Data Analysis

The Statistical Package for the Social Sciences, version 24.0 (IBM Corporation, 2016) was used to analyze frequencies of student responses to questions on the Minnesota Student Survey. Differences in the frequencies of student responses for mental health need and treatment during the previous 12 months across each district location

(e.g., rural, suburban, and urban) were examined via crosstabs analysis. Chi-Square tests of significance examined whether there were statistically significant differences across districts in the frequencies of responses on questions of interest.

CHAPTER 3

RESULTS

The first research question examined differences across school districts of different community sizes in the rates of self-reported mental health needs by students on the Minnesota Student Survey. The second question examined differences across school districts of different community sizes in the rates of self-reported mental health treatment by students. Data were further examined to determine differences in frequencies of responses for both mental health need and treatment, based on student socioeconomic background, as determined by receiving free or reduced-price lunch.

Mental Health Need

Students attending school in a rural setting reported the highest frequency of mental health needs ($n=39$, 32%) relative to suburban students ($n=110$, 21%) and urban students ($n=178$, 20%) completing the survey. The proportion of students reporting mental health needs varied significantly across rural, suburban, and urban settings, $X^2(2, N = 1549) = 9.812, p = .007$, with a disproportionate number of rural students reporting mental health needs, when compared with students from suburban and urban school districts.

Data was further analyzed to determine whether the differences across school districts varied for students from different socioeconomic backgrounds. Of students receiving free or reduced-price lunch, students from a rural setting reported the highest

frequency of mental health needs in the past year ($n=13$, 48%) relative to suburban students ($n=4$, 17%) and urban students ($n=102$, 18%) completing the survey. The proportion of students receiving free or reduced-priced lunch and reporting mental health needs varied significantly across rural, suburban, and urban settings, $X^2(2, N = 606) = 14.599$, $p < .001$, with a disproportionate number of rural students receiving free or reduced-price lunch reporting mental health needs compared to students in suburban and settings.

Of students who indicated they did not receive free or reduced-price lunch, and self-reported mental health need, rural ($n=19$, 26%), suburban ($n=103$, 22%), and urban ($n=39$, 30%), there were no significant differences in the frequency of self-reported mental health needs when school settings were compared, $X^2(2, N = 671) = 3.748$, $p = .153$.

Mental Health Treatment

The study sought determine differences in frequency of responses for current mental health treatment (i.e., received within the last year). Students attending school in a rural setting reported receiving mental health treatment ($n=19$, 18%) at a rate similar to suburban students ($n=73$, 15%) and urban students ($n=101$, 12%) completing the survey. There were no significant differences across school settings in the number of students who reported receiving mental health treatment, $X^2(2, N = 1,423) = 4.183$, $p = .123$.

Data for each school district was further analyzed to determine if there are differences in the frequency of reported mental health treatment across school districts for students from different socioeconomic backgrounds.

Of students receiving free or reduced-price lunch, students from a rural setting reported the highest frequency of mental health treatment in the past year ($n=7$, 33%)

relative to suburban students ($n=3$, 16%) and urban students ($n=59$, 11%) completing the survey. The proportion of students receiving free or reduced-price lunch and reporting having received mental health treatment varied significantly across rural, suburban, and urban settings, $X^2(2, N = 559) = 9.216, p = .010$, with a disproportionate number of rural students receiving free or reduced-price lunch having reported receiving mental health treatment, when considering all districts (e.g., rural, suburban, and urban).

Of students who indicated they did not receive free or reduced-price lunch, and self-reported mental health treatment, rural ($n=8$, 12%), suburban ($n=68$, 16%), and urban ($n=21$, 18%), there were no significant differences in the frequency of self-reported mental health treatment when school settings were compared, $X^2(2, N = 607) = 1.239, p = .538$.

CHAPTER 4

DISCUSSION

The purpose of the current study was to examine if there were differences across rural, suburban, and urban school districts in the rates of student self-reported mental health needs and use of mental health treatment. The differences were further examined to determine if they varied for students from different socioeconomic backgrounds, as indicated by eligibility for free and reduced-price lunch. Understanding how community context and socioeconomic status intersect and are related to student mental health need and treatment is important to the field of school psychology. School psychologists are trained to support student social, emotional, and academic well-being, and are in a unique position to collaborate with school and community systems. Armed with an understanding of how the influence of community context (e.g., provider availability, insurance coverage, trauma exposure, crime) and socioeconomic status may vary by school, school psychologists can facilitate collaboration, allowing these systems to effectively work together to identify and ensure student mental health needs are met.

Using data from the Minnesota Student Survey (2019), the frequency of responses from 8th grade, middle school students in rural, suburban, and urban districts within Minnesota were compared. The study first addressed student mental health need by asking if there are significant differences across school districts in the rates of student self-reported mental health needs. Students attending school in a rural setting had the

reported the highest frequency of mental health needs relative to suburban and urban students completing the survey. Further examination considered if the differences across school districts varied for students from different socioeconomic backgrounds. The proportion of students receiving free or reduced-priced lunch and reporting mental health needs varied significantly across rural, suburban, and urban settings, with a disproportionate number of rural students receiving free or reduced-price lunch having reported mental health need. Of students who indicated they did not receive free or reduced-price lunch, there were no significant differences in the frequency of self-reported mental health needs when school settings were compared.

These findings are similar to the inverse relationship between socioeconomic status and mental health need demonstrated in the literature, dating back to 1939 when Faris and Dunham examined the connection (Faris & Dunham, 1939). When considering community setting, researchers have found that children living in rural areas have the same and sometimes greater rates of mental health need when compared to children from urban areas (Polaha et al., 2011; Anderson & Gittler, 2005). Boe and colleagues (2012) found that low-income status consistently predicted increased risk for mental health problems in children. Exposure to poverty is among the top risk factors for adolescent mental health (Luthar et al., 2020). This speaks to the importance of considering social inequities and their influences when assessing and supporting student mental health.

Secondly, the study addressed student self-reported use of mental health treatment. Students attending school in a rural setting reported receiving mental health treatment at a rate similar to students in suburban and urban settings, when considering students from all socioeconomic backgrounds. However, when only students receiving free and reduced lunch were considered, a disproportionate number of rural students

reported receiving mental health treatment when compared to students from suburban and urban settings. Of the students who indicated they did not receive free or reduced-price lunch, there was no significant difference in the frequency of self-reported mental health treatment when school settings were compared.

Previous research has shown that poverty is negatively correlated with diagnoses and service use for children living in rural and urban settings (Costello et al., 1996). It is possible that the students from the rural setting had better access to mental health treatment, however, this does not account for the differences in treatment rates between the students of different socioeconomic status within the same rural setting. Perhaps the students with the most financial need in that setting demonstrated the most severe need for treatment, accounting for the differences in frequencies of reported treatment. When comparing the frequencies of student reported mental health need and treatment for students of all socioeconomic backgrounds, it is noted that there is a significant difference in the rates of indicated mental health need for students in the rural area school, but no significant difference in treatment for students from the same rural area, when considering all socioeconomic backgrounds. However, when setting is considered in combination with low socioeconomic status, there is a significant difference in the rates of reported mental health treatment in the rural setting.

This speaks to the importance of considering both setting and socioeconomic status when considering student mental health need and treatment. School-based mental health services may need to be prioritized in some districts over others. While not a direct measure, the differences in the use of mental health treatment by students from low socioeconomic households between communities when considering socioeconomic status could be attributed to the different challenges each community may face in obtaining

treatment. Poverty and ethnicity are closely entwined with things like limited insurance coverage, poorer housing options, exposure to trauma, and limited availability of mental health services in one's community (Blackstock et al., 2018). Contrary to the findings of higher rates of mental health treatment in the rural setting, research suggests residents of smaller communities sometimes refrain from seeking mental health treatment due to the stigma that may be attached. Blackstock and colleagues (2018) found in the rural setting, family belief about mental health treatment (i.e., stigma, trust in health care providers), as well as awareness (i.e., acknowledgement that a mental health issue exists) may impact treatment. In addition, families in rural areas may be less familiar with how therapy works and what the roles of the family, child, adolescent, and mental health professionals are in the process (Smalley et al., 2010). When considering these potential barriers, having adequate school-based mental health services can help to mitigate the effects. School-based mental health services can increase accessibility of care and decrease stigma associated with treatment (Becker et al., 2015).

Implications for Practice

The results of this study speak to the importance of understanding how community context and student socioeconomic status may influence student mental health need and access to or use of treatment in different school settings.

Understanding Community Context

The current study found that student mental health needs and treatment use differs between communities. The demographics of the community settings also differed in poverty rates, income, insurance coverage, and mental health provider availability. Further emphasizing the importance of availability of mental health services within the school, researchers found that the education sector was the sole source of care for the

majority of children in who received mental health care (Costello et al., 1996). School psychologists are in a position to collaborate with communities to better identify need for student mental health support. This may mean that school psychologists need to consider mental health services differently or work with the community to allow better access to services for students. This understanding of community differences for student mental health needs and treatment can have consequences for the allocation of mental health resources within the schools. It can also help to define the role of the school psychologist within different school environments.

Inaction in addressing mental health needs will have long-lasting consequences beyond childhood and adolescence (Kieling et al., 2011). The presence of mental health needs connects to school-related problems, including increased risk of discipline problems, absenteeism, poorer academic performance, school dropout, and juvenile delinquency (Davis et al., 2006; Finning et al., 2019; McLeod and colleagues, 2012; Nelson et al., 2004). Children between the ages of 12 and 17 with unmet or unnoticed mental health needs experience increased rates of substance abuse, depression, and suicide. Lack of treatment also leads to other health-related problems and a lower quality of life (Brueck, 2016).

Understanding how contextual factors may impact mental health need and treatment is important for school psychologists because schools can play a pivotal in helping to ameliorate mental health challenges and possibly limit the long-term impact by promoting collaboration and service provision for students in need. School psychologists are uniquely qualified to address mental health services at the student level as well as the systems level. Increased awareness of how family factors and community factors intersect with socioeconomic status is important when determining if there are adequate services

available to meet student mental health needs. The National Association of School Psychologists (2020) provides a practice model of 10 domains to guide service delivery in the support of students, families, and the school community. The model supports that school psychologists facilitate effective communication and collaborations among families, teachers, and community providers. School psychologists advocate for needed change not only at the student and building level, but also at a district, state, and national level (NASP, 2020).

Mental Health Screening

The impact of untreated student mental health needs supports the need for identification by prioritizing routine screening for mental health needs and increasing access to mental health professionals for further evaluation. Data indicates the availability of mental health services providers varies amongst community settings (Centers for Disease Control and Prevention, 2015). Understanding the student mental health needs and treatment within the community context can help inform the role of school psychologists, building better access to mental health services and prevention efforts for kids (NASP, 2020). Nabors and colleagues (2001) report on studies evaluating the cost of schoolbased mental health services and found that mental health services are often less expensive to provide in the schools than in private, community-based mental health services. This research is increasingly embraced as more community-based service providers are collaborating with schools to provide services to students within the schools.

Prevention

Understanding the factors that may impact student mental health needs and treatment is important, as indicated by this study. With the knowledge that each community setting faces unique challenges in addressing student mental health need and

treatment, increasing efforts directed towards prevention could help students in every district setting. School psychologists have specialized training that enables them to also take active role in prevention efforts (NASP, 2020). A study by Cook and colleagues (2015) found that implementing Positive Behavioral Interventions and Supports (PBIS) and Social Emotional Learning (SEL) systems had a significant positive impact on overall student mental health functioning. The proactive approach of implementing programs to help promote mental health can help to reduce mental health need and mitigate the impact of scarce resources.

Implications for Future Research

Future research should continue to exam how community context and socioeconomic status may impact student metal health and treatment. Research supports the importance how we define socioeconomic status (Lubienski & Crawford Crane, 2010; Hauser, 1994) and how it may be influenced perceived social status (McLaughlin et al., 2012). Understanding how socioeconomic status intersects with varying community resources (US Census Bureau, 2019; Centers for Disease Control and Prevention, 2015) could help school psychologists and communities collaborate in supporting student mental health.

Different Considerations for Socioeconomic Status

It is important to consider the differences in the relationship between student socioeconomic status and neighborhood district socioeconomic status for mental health needs and treatment. Future mental health research should further examine the relationship between different ways of defining socioeconomic status and outcomes. Eligibility for free or reduced-price lunch is often used in education research because it is readily available and cost-effective (Harwell & LeBeau, 2010). Using this one data point

(e.g., current household income) as the sole factor to determine socioeconomic status may cause us to overlook important factors (e.g., education, family structure, social class differences) that may increase mental health need and impact access to mental health treatment (Lubienski & Crawford Crane, 2010). Hauser (1994) also acknowledges there are many factors beyond income that are not considered in federal poverty guidelines. The cost of earning income, childcare, cost of living as determined by location, health insurance, and taxes should be considered when determining poverty (Hauser, 1994). An essential practice for education research to adopt is to carefully define what socioeconomic status is intended to represent in the study and ensure that is consistent with the study's purpose.

Perceived Social Status

Another area to consider in future research is the student's perceived social status and how it may impact mental health, and this can be difficult to measure. This study did not measure the influence of students perceived social status. When determining a student's socioeconomic status, the student may be considered poor according to the government's definition of adequate family income (absolute poverty). Alternatively, the student's family may have low-income relative only to others in the community (relative deprivation). Relative deprivation may also be measured as a subjective state, measuring the individual's sense of whether or not he or she is better off or worse off than others in their community (subjective social status). In a study by McLaughlin et al. (2012), researchers found associations between socioeconomic status and adolescent mental health were most closely tied to perceived social status. Worth noting, the subjective nature of perceived social status is more responsive to interventions than the objective aspects of socioeconomic status.

Community Mental Health Services

Further research is needed to define how access to health services varies in across different community contexts. The three settings in this study varied in several areas, including medium incomes, percentages of individuals in poverty, and access to mental health providers (US Census Bureau, 2019; Centers for Disease Control and Prevention, 2015). These differences in access can result in very difference experiences for students. Psychologist Uri Bronfenbrenner's ecological systems theory provides a foundation for understanding and support of adolescent behavior and speaks to the importance of understanding social systems and contexts in which humans develop (Whitcomb & Merrell, 2013). The sphere of influence for these social systems plays out at every level in adolescent development, from the most proximal system in their life (e.g., microsystem) through to the outermost level of the model (e.g., macrosystem) affecting their general values, beliefs, and resources in the community (Whitcomb & Merrell, 2013). Having a better understanding of the student experience within their systems could help to inform the need for services to address student mental health.

Limitations

There are several limitations to consider when considering generalizing this study's findings.

School and Community Mental Health Services

Frequency of the responses were considered from 8th grade students within only three districts, all located in one state. It is difficult to generalize results to other rural, suburban, and urban communities when each may vary in their demographics and access to services. This study considered student responses related to mental health need and

treatment. It is possible that the mental health services available in each school and influenced the sense of school connectedness and this may have influenced the results. Data was not collected specific to the services each school provided or how accessible community resources are to students. It is also unknown if the mental health treatment utilized by students was provided within the school or the outer community setting. Future research should consider how service availability may impact student responses.

Archival Data

This study looked at publicly accessible archival data. Archival data is information, previously collected by others, and open to systematic study. While using archival data may have the advantages of being readily available and cost effective to obtain, it is not without its limitations. The questions considered from the student survey were not specifically developed for this study. Archival data may not address all areas of the research questions and requires the researcher to flexible in thinking about their research questions (Jones, 2010). The data collected did not allow for accessing individual student responses and therefore it wasn't possible to look at interactions. When looking at the frequency of student responses indicating mental health need, it is not possible to determine if the frequency of student responses indicating mental health treatment are from the same or different students in each district.

Student Self-Report

The responses from the Minnesota Student Survey are solely self-report, which means the student reported their perceptions of their mental health need, treatment received, and if they received free or reduced-price lunch. The survey responses were anonymous, and they could not be verified for accuracy. It was not possible to confirm the students' self-reports of long-term mental health, behavioral, or emotional problems

with frequency of diagnoses or to verify self-report of mental health treatment. In adolescents, health-risk behaviors are often under-reported on self-report measures because some behaviors are so sensitive that they may purposely underreport because they believe engaging in these behaviors is socially undesirable (Brenner et al., 2003). The same may hold true for questions related to mental health need and treatment as these are sensitive topics that may be subject to social stigma. Brenner & colleagues (2003) note that it is difficult to independently verify self-report data in cost-effective and ethical manner. When considering the developmental level for middle school age children, Borgers and colleagues found the age of the survey participants can affect data quality. Children around the age of 11 are able to give consistent answers on surveys. Researchers found this continues to improve and stabilizes at approximately age 14. This age group can complete standardized surveys and questionnaires, similar to adults. However, this age group is very susceptible to confidentiality and context effects. Having classmates or persons of authority nearby when completing, can dramatically influence answers (Borgers et al., 2000).

Race/Ethnicity and Gender

This study did not consider whether the frequency of student reported mental health need and use of mental health treatment varied by race/ethnicity and gender, and whether it differed with consideration of community context and socioeconomic status. A study by Howell and colleagues (2008) found that mental health needs were comparable across urban and rural areas for different racial/ethnic groups. However, there were differences identified in the use of mental health services. When compared to Caucasian children, Hispanic and African American children in urban areas received less care. The differences in care also occurred in rural areas for Hispanic children. Gender was not

considered for this study. This is an important area, considering female students completing the 2019 Minnesota Student Survey indicated mental health needs at a rate nearly twice that of male students (Minnesota Department of Education, 2019).

Omitted Data

Because student responses were considered from an existing student survey, the questions were not developed by the researcher for this study. To determine socioeconomic status, frequencies of answers were considered for the question "Do you currently get free or reduced-price lunch at school?" Only responses of "Yes" or "No" were considered. Responses of "Not Sure" were not considered as it is unknown if the students who answered "Not Sure" would have met income guidelines for free or reduced-price lunch. Had those "Not Sure" answers been answered "Yes" or "No" it could change the frequency of responses and possibly change the significance of the findings. Large percentages of the total student populations (i.e., 20% rural, 8% suburban, and 23% urban) were not accounted for when analyzing the free or reduced-price lunch data. It is unknown how many of the "Not Sure" responses would have represented mental health need or use of treatment, impacting the configuration of responses for two of the variables of interest (e.g., mental health need & mental health treatment). In addition, responses were omitted when considering student mental health treatment. The survey asked, "Have you ever been treated for a mental health, emotional or behavioral problem? Only responses of "No" or "Yes, during the last year" were considered for this study. Responses of "Yes, more than a year ago" were not considered. Responses that were not considered could change the frequency of the responses for the other answers and could impact the overall significance of the findings.

Limitations Related to Analysis

In addition to the possible drawbacks of excluded data, the analysis could not determine if student indicated mental health need was met. Because the questions related to mental health need and mental health treatment are independent of each other, the analysis was only able to compare the frequencies of student responses and compare between the schools; it could not determine that students who indicated student mental health received treatment.

Summary

Student mental health needs are on the rise (Department of Education, 2019; Centers for Disease Control and Prevention, 2016). The differences in rates of student of mental health needs and differences in barriers to treatment are influenced by many factors including, socioeconomic status, family factors, and community factors. Merikangas and colleagues (2010) found that fewer than half of adolescents with a mental health disorder received any sort of treatment. School psychologists are in a unique position to address student mental health (NASP, 2020). This study was conducted to further the understanding of how community context and socioeconomic status may influence student mental health need and treatment. Survey responses from 8th grade, middle school students in rural, suburban, and urban districts within Minnesota considered for this study were retrieved from the 2019 Minnesota Student Survey (Minnesota Department of Education, 2019). Survey responses were compared to determine differences in frequencies of responses based on school of enrollment between student self-reported mental health, behavioral, or emotional problems and their self-reported rates of obtaining treatment for mental health concerns within each school. Then, analysis explored whether results differed when student socioeconomic

backgrounds were considered. Overall, the study identified that student indicated mental health need was most significant in the rural setting when considering all students, and when considering students of lower socioeconomic status. Findings for student indicated mental health treatment were not significantly different across settings, when all student responses were considered, but did indicate a significant difference for rural students using mental treatment, when looking only at students of lower socioeconomic status. Research is needed help school psychologists to better identify gaps between mental health need and treatment in different community settings. Continued research can help identify unmet mental need and allow for effective collaboration with community mental health resources.

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APPENDIX A: Pearson Chi-Square Analysis Tables

*Mental Health Need in Rural, Suburban, Urban School Districts
Minnesota Student Survey*

Mental Health Need	Rural		Suburban		Urban	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
No	82	68%	426	79%	714	80%
Yes	39	32%	110	21%	178	20%

Chi-Square Tests				
Mental Health Need	<i>n</i>	<i>Value</i>	<i>df</i>	<i>p</i>
Pearson Chi-Square	1549	9.812 ^a	2	.007

Note: 0 cells (0.0%) have expected count less than 5. The minimum expected count is 25.54.

*Mental Health Need in Rural, Suburban, Urban School Districts
Free and Reduced-Price Lunch Eligible
Minnesota Student Survey*

FRL Eligible	Rural		Suburban		Urban	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
No	14	52%	20	83%	453	82%
Yes	13	48%	4	17%	102	18%

Chi-Square Tests				
FRL Mental Health Need	<i>n</i>	<i>Value</i>	<i>df</i>	<i>p</i>
Pearson Chi-Square	606	14.599 ^a	2	< .001

Note: 1 cell (16.7%) has expected count less than 5. The minimum expected count is 4.71.

*Mental Health Need in Rural, Suburban, Urban School Districts
Non-Free and Reduced-Price Lunch Eligible
Minnesota Student Survey*

Non-FRL Eligible	Rural		Suburban		Urban	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
No	54	74%	365	78%	91	70%
Yes	19	26%	103	22%	39	30%

Chi-Square Tests

Non-FRL Mental Health Need	<i>n</i>	<i>Value</i>	<i>df</i>	<i>p</i>
Pearson Chi-Square	671	3.748 ^a	2	.153

Note: 0 cells (0.0%) have expected count less than 5. The minimum expected count is 17.52.

*Mental Health Treatment in Rural, Suburban, Urban School Districts
Minnesota Student Survey*

Mental Health Treatment	Rural		Suburban		Urban	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
No	85	82%	415	85%	730	88%
Yes	19	18%	73	15%	101	12%

Chi-Square Tests

Mental Health Treatment	<i>n</i>	<i>Value</i>	<i>df</i>	<i>p</i>
Pearson Chi-Square	1423	4.183 ^a	2	.123

Note: 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.11.

*Mental Health Treatment in Rural, Suburban, Urban School Districts
Free and Reduced-Price Lunch Eligible
Minnesota Student Survey*

FRL Eligible	Rural		Suburban		Urban	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Mental Health Treatment						
No	14	67%	16	84%	460	89%
Yes	7	33%	3	16%	59	11%

Chi-Square Tests

FRL Mental Health Treatment	<i>n</i>	<i>Value</i>	<i>df</i>	<i>p</i>
Pearson Chi-Square	559	9.216 ^a	2	.010

Note: 2 cells (33.3%) have expected count less than 5. The minimum expected count is 2.35.

*Mental Health Treatment in Rural, Suburban, Urban School Districts
Non-Free and Reduced-Price Lunch Eligible
Minnesota Student Survey*

Non-FRL Eligible	Rural		Suburban		Urban	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Mental Health Treatment						
No	58	88%	359	84%	93	82%
Yes	8	12%	68	16%	21	18%

Chi-Square Tests

Non-FRL Mental Health Treatment	<i>n</i>	<i>Value</i>	<i>df</i>	<i>p</i>
Pearson Chi-Square	607	1.239 ^a	2	.538

Note: 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.55.