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# Exploring the Relationship Between School Organizational Health, Advice Seeking Networks, and Student Behavior

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By

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Exploring the Relationship Between School Organizational Health, Advice Seeking Networks, and

Student Behavior

A Dissertation Presented

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## DEDICATION

For my family and teachers who have always supported me.

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ABSTRACT

EXPLORING THE RELATIONSHIP BETWEEN SCHOOL ORGANIZATIONAL HEALTH, ADVICE

SEEKING NETWORKS, AND STUDENT BEHAVIOR

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The purpose of this study was to explore the relationship between organizational health and advice seeking behavior of school staff around students exhibiting social, emotional, or behavioral concerns. School staff are front line responders to mental/behavioral health issues and it would benefit schools to better understand the organizational factors that influence advice seeking behavior and the affect that school climate amongst teachers has on student behavior. This study investigated the climates and communication patterns of two urban elementary schools. Social network analysis was used to visualize and analyze both schools' respective networks. School staff completed the Organizational Health Inventory as well as provided data regarding which staff members they have sought out and received helpful advice in regards to students social, emotional, and behavioral functioning. Findings suggest that high levels of organizational health were associated with frequent advice seeking behavior. Individuals were more likely to reach out to staff who had longer tenure, held administrative positions, and those working closely together (e.g., grade level). Implications include creating system norms and overcoming other barriers to enhance advice seeking behavior among staff.

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**CHAPTER I**

**INTRODUCTION**

This study explored the rising rates of mental health issues in children and adolescents and the challenges that schools face trying to effectively meet the various needs of their students. In order to meet student needs with finite resources, it is imperative that schools develop efficient systems and structures that maximize resources to support students' social, emotional, and behavioral needs. Efficient systems can be linked to organizational health. Schools with strong organizational health have been associated with positive outcomes. This study explored Organizational Health and the way that it is measured. One important feature of Organizational Health is the way that staff are able to work collaboratively with one another and the support that they are able to provide to each other when needed. Responding to students' behavioral challenges can be complicated and stressful, making it helpful to have other trained staff members for support. Teachers that are well connected to one another will likely be able to access the knowledge and expertise that exists within the school network. It is through communication that these ideas can be shared and then put into practice. This study used Social Network Analysis as a way to understand network resources and the advice seeking networks that exist within schools.

**Student Mental Health**

Estimates suggest that one in five U.S children between the ages of three and seventeen have a mental, emotional, developmental, or behavioral problem (Burns et al, 1995; Costello et al.,1996; Cree et al., 2018; Hoagwood & Johnson, 2003; National Survey of Children's Health, 2016; U.S. Public Health Service, 2000).  Other reports suggest that 7% of the population display moderate to severe behavior problems and an additional 15% show mild problems (Mash &

Dozois, 2003). Overall, childhood prevalence of childhood mental illness (also referred to as psychopathology) ranges between 14-22% (Mash & Dozois, 2003) with a higher prevalence rate occurring in children living in poverty (Cree et al., 2018).

Child psychopathology persists into adulthood, 74% of 21-year-old individuals diagnosed with a mental illness experienced prior mental health struggles (U.S. Public Health Service, 2000), yet far less attention is spent on the study of psychopathology in children (Mash & Dozois, 2003). Psychopathology is the result of many interacting determinants making up cognitive, affective, physiological, and behavioral components including early infant disposition, social-cognitive deficits, deficits in social learning emotion regulation, and impulse control (Mash & Dozis, 2003).

Students who exhibit early social and academic skill deficits (shyness, aggression, learning difficulties) in first grade are more likely to engage in antisocial or criminal behavior later in life (Ialongo, Poduska, Werthamer, & Kellam, 2001). Behavioral challenges are also linked to reduced academic achievement. Students with disciplinary histories including office discipline referrals and suspensions experience higher rates of academic failure (Morrison, Anthony, Storino & Dillon, 2001).

The Surgeon General's National Action Agenda and Mental Health Report (U.S. Public Health Service, 2000) took a positional stance that it is essential that as a country we begin to recognize mental health as a vital part of children's overall health. Mental health should be treated as a significant component of the public health model and increased efforts need to be made to improve access, quality, and integration of mental health services (Strein, Hoagwood, Cohn, 2003). Adopting a public health model to respond to mental health in schools would require a shift in practices from the individual as the client to the population. For this reason,

many schools have shifted their service delivery model to a multi-tiered systems of support (MTSS) for behavior. One commonly used approach to MTSS is Positive Behavior Interventions and Supports (PBIS).  PBIS is an organizational innovation that incorporates a tiered framework by creating strategic structure to prevention efforts including screening procedures, explicit teaching and reinforcing of behavioral expectations, and a continuum of evidence-based interventions for students unresponsive to the universal efforts. PBIS aims to prevent students from exhibiting problematic behavior and to respond quickly to students who are demonstrating risk factors. Research indicates that as the latency to implement evidence-based interventions grow, there will be increased risk of the problem intensifying, highlighting the importance of swift response to students in need (Hawken, Vincent, & Schumann, 2008; Horner et al., 2009; Sugai & Horner, 2002;). However, adopting only universal PBIS supports is not enough to increase access to support for students in need. As many as 20 percent of students will require more intensive, targeted behavioral support (Debham, Pas, & Bradshaw, 2011; Severson, Walker, Hope-Doolittle, Kratochwill, & Gresham, 2007).

The Surgeon General's Report (2000) further addressed that many students do not receive access to necessary mental health services. Burns et al. (1995) identified five service sectors where children access mental health services. These sectors include psychiatric hospitals (residential treatment centers) schools (guidance counselor, school psychologist, or special educator), heath care (e.g. physician, community health center, emergency room), child welfare (e.g. social services counseling), and juvenile justice (e.g. jail, probation officer, court). Only 40% of the sample who met the diagnostic criteria accessed services. Furthermore, between 70-80% of children who received services received them from professionals working within the education system (Burns et al, 1995). Due to the amount of time students spend in schools they

are a logical site for early prevention and intervention efforts (Doll & Cummings, 2008;

Hoagwood & Johnson, 2003; Strein et al., 2003).

Schools are a natural site for the application of mental health prevention and intervention

efforts.  Efforts should address stigma reduction and improve identification systems in order to

ensure students access to support in order to disrupt early risk trajectories (Hoagwood &

Johnson, 2003; Severson et al.,2007; Walker, Nishioka, Severson, Feil, 2000).  However, in the

10 years following the Surgeon General's Report mental health prevention is still not highly

prioritized within our country or our schools.  Debates over cost, effectiveness, and school role

have all been cited as roadblocks to a necessary shift in practice (Adelman & Taylor, 2010).

Further, schools frequently adopt prevention programs, however, they are often funded through

grants, reducing their long-term sustainability (Adelman & Taylor, 2010). Further, schools have

difficulty integrating their prevention and intervention efforts increasing fragmentation, staff

confusion and reduced levels of staff support. In order for schools to effectively braid their

initiatives and set up systems to meet the needs of all students it is imperative that the

organization is set up in a way that is responsive to the needs of the students, staff, and the

community.

### Organizational Health

The concept of organizational health emerged from Parsonian theory as a way to

operationalize the feel of an organization which has been previously been conceptualized and

studied using the following terminology, organizational character, milieu, atmosphere,

organizational ecology, culture, and climate (Hoy, Tarter, & Kottkamp, 1991). Parson (1953)

suggested that a healthy school is one in which there is alignment across the technical (student

learning processes), managerial (internal administrative function) and the institutional level

(connecting schools to their environment providing support and clear norms and values). Also, important to the concept of organizational health are culture and climate. Organizational culture is viewed as the set of institutional norms and expectations describing expected individual behavior and the systems employed for task completion within the organization. Similarly, organizational culture is related to the quality of social interactions and the efficiency and efficacy of the processes that make up the organization (Aarons & Sawitzky, 2006; Tsui & Cheng, 1999). In contrast, organizational climate is defined as the shared perceptions and importance of different policies, practices and procedure, and the behavioral expectations that are created and maintained based on environmental rewards (i.e. desired or undesired reactions individuals have toward behavior) (Schneider, Ehrhart & Macey, 2013).

Schools with strong organizational health have been linked to improvements in academic achievement, teacher commitment, psychological and physical wellbeing, graduation rates, and reduced teacher burnout (Grayson & Alvarez, 2008; Hoy & Feldman, 1987; MacNeil, Prater & Busch, 2009; Thapa, Cohen, Guffy, Higgins-D'Alessandro, 2013). Thus, demonstrating the importance that the organizational climate and culture has on the social, emotional, physical, and academic wellbeing of staff and students.

The Organizational Health Inventory emerged as a way to operationalize the feel of an organization (Hoy et al., 1991). The inventory was constructed and empirically supported based on five factors: institutional integrity, collegial leadership, resource influence, teacher affiliation, and academic emphasis (Hoy & Feldman, 1987). Institutional integrity is the school's ability to create a strong and clear vision while protecting teachers and staff from unreasonable community and parental demands. Collegial leadership refers to the disposition and regard shown by school administrators. Resource support, teacher affiliation, and academic emphasis measures teachers

and support staff's ability to access necessary materials, the existence of positive relationships between teachers, and the level of academic standards set for student achievement, respectively (Hoy & Feldman, 1987).

Studies using the Organizational Health Inventory found that schools with higher levels of organizational health have greater attendance rates, superior academic achievement, and increased adjustment and emotional development in students (Bevans, Bradshaw, Miech, & Leaf, 2007). The effects of positive organizational health are felt beyond the students and are related to staff work commitment and increase levels of self-efficacy. Bevans et al. (2007) studied the connections between staff and school level characteristics on individuals' perception of organizational health. Unlike previous research, this study captured individual self-reports of organizational health rather than studying the aggregate data. The research community remains divided on the level organizational health should be interpreted. Studying organizational health as a group level variable ignores previous research that indicated individuals with different attributes and having a different position in the same organization may have different views on the organization's climate so it is important to further investigate the school's network related to individuals' perceptions of organizational health Bevans et al. (2007).

**Trust.** Another important organizational property to consider when discussing organizational health is the level of trust felt between school staff and the likeliness of advice seeking regarding challenging student behavior (Bryk & Schneider, 2002). Organizational expectations can create norms and expectations of individuals working within the system. Relational trust within an organization may be essential to understanding the barriers of help seeking within a school organization. Relational trust considers many aspects of interpersonal relationships including respect, competence, personal regard for others, and integrity, leading to

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enhanced confidence in administration and faster innovation adoption (Bryk & Schneider, 2002). Relational trust is an organizational property that influences the functioning of a school (Bryk & Schneider, 2002). Within schools there are expected role relationships (e.g. principal to teacher, teacher to teacher) that come with their own sets of mutual expectation and obligations. When these expectations are not met, relational trust will diminish possibly creating conflict and influencing future advice seeking behavior. Principals play an influential role in setting the stage for expectations. Bryk and Schneider state the following:

> Any actions taken by the principal that reduce teachers' sense of vulnerability are thus highly salient. Establishing inclusive procedures for decision making affords teachers real opportunities to raise issues and be heard. When such routines are implemented effectively, teachers come to understand that they have a meaningful voice in influencing important decisions that affect their lives. (P. 29)

For young students exhibiting behavioral challenges, teachers are the gatekeepers to effective interventions. Teachers' willingness to seek help is important to student access to services as they play an essential role in the identification and intervention process. Mental health literature defines help-seeking as obtaining assistance from mental health providers, other formal services (school professionals) or informal support sources (friends and family) for the purpose of resolving emotional or behavioral problems (Srebnik, Cauce, & Baydar, 1996). Help-seeking is the fundamental link between problem recognition and obtaining necessary services (Klimes-Dougan, Klingbeil, & Meller, 2013). Srebnik et al. (1996) describe barriers to help seeking behavior which include the network's perception of attitude toward service use, access, and attitude of the service provider. Throughout this paper, teachers seeking out support for student behavior will be referred to as advice seeking.

**<u>Advice Networks</u>**

School reform is frequently discussed for the purpose of enhancing academic outcomes for all students. Often school reform hinges on enhancing teachers' intellectual human capital through highly qualified teacher requirements and professional development. This assumes that the crux of school change hinges on transforming knowledge and skills of individual teachers (Bryk & Schneider, 2002). Mistakenly, when this approach is utilized little attention is placed on the complex social networks occurring within school walls. Relationships between staff are essential to bolster a consistent and coherent environment vital to school improvement (Bryk & Schneider, 2002; Coburn, Choi & Matta, 2010). Organizations described by having strong ties between members have been associated with improvements in teacher learning, student outcomes, and teacher retention. In addition, strong ties influence the faster adoption of new innovations, increased ability to transfer complex information, encourages problem solving, and improves overall organizational performance (Bridwell-Mitchell and Cooc 2016; Coburn, Choi & Matta, 2010; Coleman, 1988; Nahapiet & Ghoshal, 1998). Nahapiet and Ghoshal (1998) describe 'organizational advantage', which the authors define as the capability of the organization to create and share knowledge, results from the structure of the network, trust, norms, as that improves member accessibility within the network which encourages the sharing of particular knowledge or expertise improving the individual human capital of all members.

**Social Capital.** Schools are complex social networks that rely on shared resources and support between staff. Social capital depends on the existence of social structures to facilitate the action of network actors (Coleman, 1988). Coleman (1988) suggests that close relationship can facilitate certain transactions (i.e. resource sharing, looking after children) as they rely on trust, expectations, and obligations. Social capital refers to the value that is generated through gaining

social resources that are collected and then invested for social 'profits' (Carolan, 2014). Or in other terms, social capital can be thought of as a social relation investment by members of a system that leads them to embedded resources that can be spent on return instrumental or expressive actions (Carolan, 2014). The value of social capital depends on the quality and quantity of resources that exist within a network. Many factors can influence one's social capital like location within a network (number of connections to value about sources) and individual knowledge (human capital). There are two network conceptualizations of social capital; brokerage versus closure. Burt's structural hole theory vies social capital as an individual good that when one has high social capital, they possess a competitive advantage. Specifically, when their relationships bridge one group of individuals to another, the individual actor is positioned to broker the flow of resources and control the information exchanged. In contrast to brokerage, network closure views social capital as a collective good, that the community has greater social capital when networks are closed (higher levels of density). It is possible that school networks marked by closure create a greater sense of enforceable trust due to the power of the norms and obligations within the network (Portes, 1988). Network redundancy influences access to information where information is more likely to flow when there are more reciprocal connections between actors (Carolan, 2014).

When considering teachers' access to quality behavioral advice it is important to think about the relational structures that exist that either promote or hinder a teacher's ability to access support. Social capital theory posits that it is through social relationships that individuals are able to access resources (Lin, 2001). Further Penuel, Riel, Krause, and Frank (2009) state the following:

Resources and expertise are embedded within particular positions in a social network and

are not freely available to anyone in a particular system, rather it is through ties to others

that one gains access to particular expertise and resources by relying on norms of

helpfulness and obligation to others that arise among individuals who interact frequently

with one another (p. 126).

Schools are complex organizations and when members are not connected to other

professionals or if their connections are negative, school professionals may not be able to seek

and share advice and/or support one another. In order for students to receive proper behavioral

interventions it is important for all teachers to have access to quality support around responding

to and intervening with challenging student behavior.

It is important for teachers to have access to adequate support (expressive) and advice

(instrumental) sources when responding to behavioral challenges. Teachers are better able to tap

resources when there are structures and systems to support connections to those with relevant

expertise (Penuel et al., 2009). Panuel et al (2009) used social network analysis to investigate

the differences between two schools' social structures and how it influenced flow of resources to

subgroups. The researchers used series of interviews and questionnaires to obtain data around

school reform, collegial ties, and access to resources and expertise. Participants were provided a

roster and were asked about relationship quality, including frequency of interaction to measure

collegial ties. Findings demonstrated that the schools differed in communication channels. One

school utilized a hierarchical chain of command where information is held and communicated by

the principal alone in contrast to the second school that had many teacher leaders reaching out to

other experts to gain and share expertise with their colleagues to enhance teaching practices.

Teachers at the school one felt more isolated and found it harder to both share and obtain

meaningful knowledge with colleagues. Comparatively, teachers at the school two reported feeling as though they had the sufficient access to needed resources (Penuel, et al. 2009).

**Social Network Analysis.** Social network analysis (SNA) provides a unique way to mathematically and visually analyze the relational and social structure in which behavior occurs (Butts, 2008; Wasserman & Faust, 1994). SNA allows researchers to identify different structural variables, relational ties, attributes, and environmental conditions that influence social relationships and in turn influences the success of a network. SNA views each social entity within a defined network as an actor. Each actor (node) has their own set of relational ties (lines) that may represent the sharing of material resources, friendship, physical connection, etc. Secondary to studying the ties between individuals, SNA allows the investigation of the attributes of each actor (Wasserman & Faust, 1994). This is important as other network studies have found the presence of homophily which means that an individual's attributes may influence the access one has to network resources. For example, individuals sharing similar demographics may be more likely to seek advice from one another than other members of the network (McPherson, Smith-Lovin, & Cook 2001).

Networks are bound by a specific set of social relations, often based on group membership (e.g. employees within a school, 4th grade teachers) (Butts, 2008; Carolan, 2014; Wasserman & Faust, 1994). SNA accepts that individuals and actions are interdependent, that the environment influences the relational patterns observed, and that social ties allow for the transmission of resources (Carolan, 2014).

<u>**Statement of the Problem**</u>

Students exhibiting social, emotional, and behavioral challenges often do not receive the support that they require (Burns, et al., 1995; Costello et al., 1996; Hoagwood & Johnson, 2003;

U.S. Public Health Service, 2000). States have been called on by the federal government in order to improve students' access to mental health services (U.S. Public Health Service, 2000). One common strategy schools have used to transform their approach to social, emotional, and behavioral health is through the adoption of multi-tiered systems of support for behavior. As part of a multi-tiered framework, it is essential to build network structures that support teachers and staff seeking advice from one another in order to best support students. Schools should focus on building an organizational culture marked by trust and cohesion to bolster advice seeking. Informal and formal network structures can enable the capacity for teachers to gain access to knowledge and support (Debnam et al., 2011). However, there may be environmental conditions that increase the likelihood that teachers will demonstrate reluctance to seek advice. Potential organizational and interpersonal factors that may create an environment where teachers resist advice include the climate within the building or district, sense of fear of the administration, lack of trust among colleagues, or unreachability to individuals with behavioral expertise. It is important to understand in more detail how the organizational health of a network influences the advice seeking behavior. Further, it is important to understand how advice seeking behavior relates to behavioral outcomes for students.

## Purpose of the Study

The first purpose of this study is to investigate the relationship between organizational health and the advice seeking networks of school staff around students exhibiting social, emotional, or behavioral concerns. This research will shed light on the organizational factors that influence advice seeking among teachers/staff. For example, if teachers/staff feel trusting of each other, there may be an increased willingness to go to a peer for advice about a student. However,

if teachers feel like they do not have trust in the individuals working around them that might stifle communication, leading to less shared knowledge and expertise.

A secondary purpose of this study is to investigate the influence that advice seeking behavior has on the student behavioral climate (e.g. attendance, suspensions, office disciplinary referrals). If a teacher is willing to seek out advice around a challenging student, that might result in fewer office disciplinary referrals or suspensions for that particular student.

### Research Questions

1. What does the advice seeking communication network of licensed school staff look like across schools?

In detail,

- Who are licensed professionals reaching out to for advice within their schools?
- Where are there stars, bridges, isolates and bottlenecks in the network?
- What is the overall density, connectedness, reciprocity, and efficiency of each school's network?

2. What does access to behavioral expertise across both networks look like? What is the reachability of support staff?

3. To what extent do advice seeking behaviors of individuals depend on perceptions of organizational health?

In summary, this research aims to explore the relationship between organizational health and advice seeking behavior of school staff as a way to meet the needs of students. The concepts introduced above will be further explored in the review of literature.

# CHAPTER II

## REVIEW OF THE LITERATURE

### Introduction

The following review of the literature explores in depth the concepts and theories guiding this research. Included is the current state of mental health disorders in children and the way schools are addressing increasing student needs. This will be followed by a review of organizational culture and climate and the importance of healthy school climate on student success. Then following this will be a review of advice seeking behavior of school staff. The review will conclude with an overview of social network theory and related concepts.

### Mental Health Crisis

Access to early interventions for emotional or behavioral challenges remains imperative in reducing negative life outcomes. Quality interventions are important for students beginning to exhibit problem behavior (e.g., aggression). Early intervention efforts can significantly reduce the likelihood of a student receiving a school suspension or a later diagnosis of an externalizing psychopathology (Ialongo et al., 2001).

Prevalence rates of mental health disorders in children and adolescence have been increasing over the years. Current research suggests that U.S. adolescents (ages 13-18) experience mood disorders (i.e., Major Depressive Disorder, Dysthymia, Bipolar) at a rate of 14.3%, anxiety disorders at 31%, Attention deficit Hyperactivity Disorder at 8.7%, and Oppositional Defiant Disorder at 12.6 % (Merikangas et al, 2018). Ialongo, Poduska, Werthamer, and Kellam (2001) report that substance abuse, depression, and anti-social behavior are of the most common mental health issues that affect adults in the United States. Merikangas et al. (2018), estimate that approximately 11.4% of adolescents met criteria for a substance abuse

disorder. Previous studies have found the prevalence of Oppositional Defiant Disorder occurs in 3% of the population and Conduct Disorder ranges from 1-10% (Ghandour et al., 2018; Hinshaw & Lee, 2003).

Evidence suggests that many behavioral challenges may be observable as early as first grade. Not only are these behaviors observable, but it is possible to deliver effective interventions. Johns Hopkins University Prevention Intervention Research Center studied the longitudinal impact of two universal prevention interventions (Classroom Centered and Family-School Partnership) addressing conduct problems of first grade students. Follow-up data were collected when the students were in sixth grade. Students in both intervention groups were less likely to meet criteria for conduct disorder and to have been suspended from school (Ialongo et al., 2001). However, the Classroom Centered intervention appeared to be more successful in reducing the occurrence of mental illness and need for services.

U.S. Department of Health and Human Services (1999) posit that mental illness results from the interaction between a child and their environment and therefore the illness is not considered to be a problem just within that child but rather there is a reciprocal relationship between the child and their environment. Similarly, Bandura's social cognitive theory is "founded on a causal model of triadic reciprocal causation in which personal factors in the form of cognitive, affective, and biological events, behavior patterns, and environmental elements all operate as interacting discriminants that influence one another bidirectionally" (Bandura, 1999). This implies that the environment in which students grow and learn affects their development suggesting that any environment that a child is in should be strategically set up in order to meet the social, emotional, and behavioral needs that child. This includes both prevention and interventions.

Access to mental health support continues to present as a challenge. Age, insurance status, geographical location, and family characteristics all affect one's likelihood to receive mental health support (Briggs-Gowin, McCue Horwitz, Schwab-stone, Leventhal, & Leaf, 2000; Costello, Egger, Agnold, 2005; Olfson, Kessler, Berglund, & Lin, 1998). Olfson et al (1998) found that individuals between the ages of 0-12 are significantly less likely to receive treatment for depression than individuals between 30-54. Burns et al (1995) studied demographic and clinical information of children receiving mental health services through a longitudinal study referred to as the Great Smoky Mountains Study of Youth. The researchers' initial sample consisted of 4500 children from eleven counties in California. The sample was reduced to 1015 children ages nine, 11, and 13 following an initial screening. These children and their parents were then interviewed using the Child and Adolescent Psychiatric Assessment (CAPA) and the Children and Adolescent Services Assessment (CASA). Based on the data collected, students fell into four distinct categories based on their clinical status determined by the Diagnostic and Statistical Manual of Mental Disorders Third Edition, Revision (DSM-III-R). The groups were as follows: Group 1- no diagnosis and no impairment (63.7%), Group 2- diagnosis and no impairment (9.1%), Group 3- impairment with no diagnosis (16.1), Group 4- diagnosis with impairment (11.1%). Participants were also asked about use of services among five sectors during the interview process. The five sectors include Mental Health, Education, Health, Child Welfare, and Juvenile Justice. Findings suggested that 20.3 % of the population met criteria for a diagnosis. The most common diagnoses included anxiety, enuresis, tic disorder, conduct disorder, oppositional defiant disorder, and hyperactivity. Males living in poverty were the most likely to meet criteria for a diagnosis. Related to service use, 21.6% of those from group 4 accessed mental health services. For many children, the education system was noted as the sole

care provider as 70-80% of those who received services did so within the school setting primarily through guidance counselors or school psychologists (Burns et al., 1995).

Schools have been identified as a place to meet the developmental and mental health needs of students, especially in poor communities where children face higher levels of adverse experiences and have access to fewer resources (Cappella, Frazier, Atkins, Schoenwald, & Glisson, 2008). While at school, children spend the majority of their school day with their classroom teacher, which means that teachers are the first line of defense when it comes to meeting children's mental health needs. However, teacher's feel that they do not have the necessary training to meet student's emotional and behavioral needs (Reinke, Stormont, Herman, Puri, & Goel, 2011). Reinke and colleagues (2011) investigated teacher's perceptions of the prevalence of mental health concerns within their school, barriers to providing mental health services, and perceptions of gaps in their own training and services. A sample of 292 teachers from five schools completed the Mental Health Needs and Practices in Schools Survey. This survey captured data regarding demographics information, perceptions and attitudes concerning the role that schools hold in addressing mental health needs, and their knowledge of and attitude toward evidence-based interventions. The participants were also asked to report on the number of students that they have taught over the past year who exhibited mental health problems (e.g., aggression, inattention, depression). Experience with prevention and intervention efforts to address mental health concerns was collected by rating their experiences with behavioral interventions and if they felt that they had the necessary skill set to meet students' needs. Lastly, participants were asked about the barriers that interfere with the delivery of such interventions and their thoughts on the role and responsibility of the school to meet the mental health needs of students. Findings suggested that most teachers have experienced students exhibiting disruptive

behaviors, inattention, hyperactivity, social skills deficits, depression and defiance. Teacher's overwhelming reported that they feel that the school should be involved in addressing mental health needs (38% strongly agreed and 51% agreed). However, most teachers (approximately 70%) do not feel that they possess "the level of knowledge required to meet the mental health needs of the children" (Reinke et al., 2011). Teacher's reported having some experience delivering behavioral interventions within their classrooms; 20% reported having minimal experience, 48% reported having moderate, and 32% reported having substantial experience, but most responders reported that they feel that they need more training in this area. Related to barriers, teachers feel that not enough mental health providers work within the school, there is not enough training to respond to students with mental health challenges, and there is an overall lack of funding to address mental health needs (Reinke et al., 2011). Shernoff et al. (2011) also studied sources of stress for teachers working in urban districts. Sources of stress include work demands, particularly, responding to significant learning and behavioral needs and dealing with state-imposed accountability measures, insufficient access to resources within the schools and within the community (e.g., including access to mental health supports), and lack of time to collaborate about practices with colleagues.

Children from families of low socio-economic status tend to exhibit more social emotional difficulties and demonstrate greater behavioral challenges (Cappella et al, 2008). Cappella et al. (2008) put forth a way to conceptualize service delivery of mental health supports in areas with high levels of poverty. Their framework is informed by public health as well as ecological and organizational theories. At the center of their framework is the idea that the primary focus of the school should be on learning but with the understanding that children's ability to learn is highly dependent on social-emotional development (Geierstanger & Amaral,

2005) in an effort to bring mental health support from the periphery into the classroom where most instruction occurs. Schools often place their mental health providers in separate parts of the school building creating mental health programming that is "marginalized from school routines and structures (p. 395)". Schools need to prioritize prevention in order to better utilize and integrate their limited resources. Through effective instruction, classroom management, parent involvement, utilizing community resources, and on-going collaboration with providers students' mental health needs and academic performance may be improved. One system that utilizes a similar framework is Positive Behavior Interventions and Supports (PBIS).

## Positive Behavior Interventions and Supports

Schools are searching for ways to more efficiently meet the increasing need of their students while grappling with lack of funding, not enough support staff, and a lack of necessary training (Cappella et al, 2008; Reinke et al, 2011). As the lure of Multi-Tiered Systems of Support (MTSS) models to prevent academic learning failures has grown, researchers have expanded the use of MTSS framework to address behavioral concerns and support mental health (Hawken, Vincent, & Schumann, 2008). Derived from the public health model, Positive Behavior Interventions and Supports (PBIS), is an organizational innovation that incorporates a tiered framework in that schools strategically structure prevention efforts, utilize screening procedures, and develop a continuum of evidence-based interventions for students unresponsive to the universal efforts. PBIS aims to prevent students from exhibiting concerning behavior and to respond quickly to students who are demonstrating risk factors. Research indicates that as the latency to implement evidence-based interventions grow, there will be increased risk of the problem intensifying, highlighting the importance of swift response to students in need (Hawken et al., 2008; Horner et al., 2009; Sugai & Horner, 2002).

**Universal PBIS Supports**. Evidence based behavioral practices are used at the systems level to target the school unit by creating systems and routines designed to improve student outcomes (Horner et al., 2009). Schools strive to integrate systems, practices, and data in order to support staff behavior, support student behavior, standardize decision making, and improve the social and behavioral competencies of all students (Sugai & Horner, 2002). Universal strategies include, systematically teaching all students the expected behavior, utilizing social, emotional and behavioral screening tools, reinforcing demonstration of expected behaviors, monitoring data and making data informed decisions to make changes (Debnam, Pas, Bradshaw, 2012; Horner et al., 2009; Sugai & Horner, 2002).

**Advanced Tiers of PBIS (Tier 2 & 3).** Even when schools have fully implemented Tier 1 supports, approximately 20 percent of students will require more intensive or targeted behavioral support (Debham et al, 2012; Severson, Walker, Hope-Doolittle, Kratochwill, & Gresham, 2007).

Unfortunately, of the approximate 14,000 schools trained in universal PBIS supports, most are not trained in advanced tiers and therefore are ill prepared to implement beyond the universal level (Debnam et al., 2012). This suggests that schools are not well positioned to respond to students requiring additional support. Students may be determined as in need of tier 2 services based on many different data sources including office discipline referrals (within a defined time frame), a school wide behavioral systematic screener, a teacher's request for assistance, or other risk factors such as being regularly tardy, grades, and attendance (Hawken et al., 2008). Tier 2 interventions should be explicitly linked to the universal school expectations allowing for more explicit teaching and practicing of expectations. Two of the most commonly utilized tier 2 interventions include Check in/Check Out (CI/CO) and social skills groups. CI/CO

provides students with additional positive adult support, structure and feedback based on school-wide expectations (Debnam et al., 2012).

Many schools prescribe targeted social, emotional, and behavioral interventions through a Student Support Team (SST) when schools are implementing advanced tiers of PBIS. The SST is a group of teachers, support staff, and administration that come together to systematically collaborate to effectively respond to students' needs (Debnam et al., 2012). SST teams should have systems for deciding when students enter and exit intervention, procedures for measuring progress and fidelity.

The SST monitors and evaluates interventions for effectiveness. However, decision rules based on progress monitoring for behavior support are not as clear as those used for academic decision-making (Hawken et al., 2008). If a student is not responsive to the assigned tier 2 intervention, a Functional Behavior Assessment (FBA) is typically conducted to create a function-based behavior support plan. FBA is a systematic process for predicting environmental factors likely contributing to the occurrence and maintenance of problem behavior (Sugai, Lewis-Palmer, & Hagan 1998).

SST teams typically include administrators, teachers and mental health professionals all contributing various expertise. Benazzi, Horner, and Good (2006) report teams with at minimum one team member possessing knowledge of behavior theory and another member having expertise of the school context increases the likelihood of creating a stronger intervention implemented with fidelity. Interventions tend to have higher levels of treatment acceptability if the intervention is viewed as having good contextual fit, if the teacher believes in the intervention, and if there is a positive relationship between the consultee and consultant (Truscott, Cosgrove, Meyers, & Eidle-Barkman, 2000).

**System Barriers to PBIS Implementation.** PBIS takes time and resources over many

years to fully implement (Barrett, Bradshaw & Lewis-Palmer, 2008) It is critical to develop the

structures, systems and climate that allow for this work to occur in order to effectively

implement PBIS and ensure its sustainability. Many factors that hinder an organization's ability

to effectively adopt PBIS include competing school initiatives, reliance and comfort using

reactive punitive consequences, belief that universal change is not needed, philosophical

differences, hopelessness about change, non-committed leadership, lack of shared ownership,

and most central to this study, is the barrier of poor school climate, negative relationships

between staff and the insecurity they feel in changing practices (Feuerbon, Wallace, &Tyre,

2013; Lohrmann, Forman, Martin, & Palmieri, 2008; Sugai & Horner, 2006). Sugai and Horner

(2006) suggest that individuals working within an organization need to perceive adequate level

of systems level support in order to implement change. This requires schools to be able to

measure organizational characteristics in order to better understand the barriers to address the

needs of both adults and the students that they serve.

## Organizational Culture, Climate, and Health

Schneider, Ehrhart, and Macey (2013) provided a review on the various

conceptualizations of organizational climate and culture, and the way the two have been

operationalized and measured. Although it should be noted that many researchers continue to use

the terms interchangeably (James, 2008); Schneider and colleagues (2013) note that

organizational climate has been previously defined as "the shared perceptions of the meaning

attached to the policies, practices, and procedures employees experience and the behaviors they

observe getting rewarded and that are supported and expected." Whereas organizational culture

has been described as the "shared basic assumptions, values, and beliefs that characterize a

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setting and are taught to newcomers as the proper way to think and feel, communicated by myths and stories people tell about how the organization came to be the way it is as it solved problems associated with external adaptation and internal integration" (Schein, 2010, Schneider et al., 2013; Trice & Beyer 1993, Zohar & Hofmann, 2012). Culture is often considered to be reflective of system norms whereas climate captures an individual's perspective (James et al., 2008).

Typically, organizational climate has been studied using survey approaches and qualitative case studies. According to Schneider et al. (2013), historically, organizational climate was more frequently studied in the 1960s and 1970s giving way to a rise in the study of organizational culture in the 1980s before transitioning back to organizational climate in 1990s. Schneider et al. (2013) investigated the frequency of publications between 2000-2010 on both organizational climate and culture and they found that 50 had been on climate and fewer than 10 for culture.

When looking at how research on climate and culture has been approached there is frequent debate on the unit of analysis (Glick,1985; Raudenberg, Rowan, & Kang, 1991; Schneider et al, 2013). Early research on both climate and culture focused on aggregate data of the whole organization but quickly shifted into research of the individual as the level of analysis, raising the question of if climate should be studied at the whole organization level or based on the experiences of the individual. Here it makes sense to introduce the idea of psychological climate. Psychological climate has been defined as the meaning that people attach to variables within their work environment (e.g., jobs, co-workers, leaders, pay, equity of treatment, opportunities for promotion) (James, et al. 2008). James further describes it as the individual's perception of the psychological impact of environment on his or her well-being. This translates into organizational climate when employees in a unit agree on their perceptions. Organizational

climate can be described as the outcomes of aggregating individuals' psychological climates (James et al., 2008).

Raudenberg, Rowan, and Kang (1991) proposed a solution to the level of analysis issue that persistent in educational climate research. Raudenberg et al (1991) posited a multivariate statistical model that allows research to capture the complexity of organizational research. Pervious researchers had either seen climate scales to be a psychological variable meaning that the unit of analysis was with the teacher whereas others worked with arrogate data where the measures where an indication of the organization. Their hierarchical model consisted of three levels. The lowest level consisted of a measurement model at the item level describing the link between items and the latent true scores. The next level investigated the true scores as the outcome measures that are predicted by teacher attributes. Lastly, the highest level looked at the variation and the covariation of school level parameters (Raudenberg et al, 1991).

Early research on climate took a holistic approach and often focused on climate for individual well-being (molar approach- often focusing on leadership styles). Schneider et al (2013) argued that this broad approach to studying climate led to variable results that fell short of predicting specific outcomes. Schneider (1975) proposed changing the research approach so when conducting climate research, the focus of the climate measures should match the focus of the outcome to be predicted. An example of this focused approach was provided by Schneider, Macey, Lee, and Young (2009), who examined the extent to which organizational service climate perceptions correlate positively and significantly with customer satisfaction and the extent to which customer satisfaction impacts financial and market performance. A sample of approximate 78 companies (i.e., health, retail, airlines, etc.) across a three-year span (2003-2005) were studied using an 8-item scale that capture the degree to which the characteristics of the

work place promoted service quality, American Customer Satisfaction Index (ACSI), and Tobin's G (financial and market performance). A path analysis was used to analyze the relationship amongst the variables and found that service climate predicts customer satisfaction which also predicts financial performance (Schneider et al, 2009).

Early climate research also largely focused on climate strength which investigates the consensus within an organization. Weak climates occur when there are inconsistencies among the policies and procedures (Schneider, et al., 2013). Climates were also often described by individual entities like safety, ethics, etc. For example, Zohar and Tenne-Gazit (2008) utilized social network analysis as means to measure the communication networks and climate strength. The researchers aimed to answer the following questions: to what extent is transformational group leadership correlated to the strength of a unit's safety climate, to what extent is the instrumental density of a unit correlated with safety climate, to what extend does the density of the friendship network affect climate, and does the density of the friendship network mediate the relationship between leadership and safety climate strength? The participants included 1108 soldiers participating in infantry solider training at five different military boot camps which were broken down into 21 companies and 45 platoons yielding 29.5 soldiers per group. Zohar and Tenne-Gazit (2008) obtained network data by asking about instrumental and friendship relationships on a five-point likert scale from a roster (i.e., "how much do you talk to your platoon members on subjects that are activity and/or mission related?") and friendship networks "with which of your platoon members do you consult, or get help from about person?" Density was calculating by dichotomizing the data (respondents answered 1-3 it was changed to no tie and if they responded with a 4 or 5 a tie was determined to exist). Centralization was measured by Freemans degree-based centrality. Leadership and climate were measured by surveys. Results

suggested that leadership's effect on safety climate is mediated by the density of the communication network, thus supporting the notion that leadership and symbolic interaction are climate antecedents (Zohar & Tenne-Gazit, 2008).

Glisson and Hemmelgarn (1998) studied the effect of interorganizational and intraorganizational factors on the quality of services and outcomes of children in state custody receiving services. They measured service quality (i.e., comprehensiveness, continuity, responsiveness, etc.), service coordination (i.e., authorization, responsibility, monitoring), interorganizational characteristics (i.e., blaming, withholding information, non-cooperation, etc.), and Organizational Climate. Organizational Climate was measured using the Psychological Climate Questionnaire which includes fairness, role clarity, role overload, conflict, cooperation, emotional exhaustion, etc. The data for all respondents within an organization were aggregated to provide a profile for each organization. Psychosocial functioning was measured using the Achenbach System of Empirically Based Assessment Child Behavior Checklist teacher form and the Teacher's Checklist of Children's Peer Relations. These assessments were given when children first entered state custody and follow up measures were conducted one year later. The researchers used linear structural equation analysis. The findings suggest that children serviced by offices with higher organizational climate showed greater psychosocial improvements compared to those being serviced be weaker climates (Glisson & Hemmelgarn, 1998).

**Climate in Schools**

The organizational culture of a school influences the decisions that are made around identifying and providing support services to students (Hemmelgarn, Glisson, & James, 2006).

Center for Disease Control and Prevention (2009) recommended school climate as a target for reform in order to improve school safety and create a buffer against negative life

outcomes (e.g., dropout prevention, mental health challenges, etc.). More specifically, a positive school climate has been associated with improving the quality of relationships, enhancing school connectedness, and can prevent at-risk students from dropping out of school. The National School Climate Council (2007) has defined school climate as "based on patterns of people's experiences of school life and reflects norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational structures".

Thapa et al. (2013) reviewed the literature on school climate. Their focus was on the five essential areas that they considered to be the dimensions of school climate. The dimensions include: Safety (e.g., comprised of rules and norms, physical safety and social-emotional safety), Relationships (e.g., respecting diversity, school connectedness, social support, and perceptions of school climate), Teaching and Learning (e.g., social emotional learning, service learning, academic learning, professional relationships, and teachers and students' perceptions of climate), Institutional Environment (e.g., physical space, resources, supplies), and the School Improvement Process. The researchers used a process where they started with expert interviews to narrow down the dimensions and hone in on essential readings starting with current and dating back to 1970. In addition, the researchers conducted extensive searches for comprehensive papers which were focused on literature reviews and meta-analysis (the final break down of articles 5% experimental studies, 45% correlational studies, 25% literature reviews, and 25% other descriptive studies). Research consistently demonstrates that climate has an impact on mental and physical health of students including reduced substance abuse, psychiatric problems, improved self-concept, and is predictive of better psychological well-being (Cairnes, 1987; Heal, 1987; Reynolds, Johnes, leger, & Murgatroyd, 1980; Rutter, Maughan, Mortimore, & Ouston, 1997 Kasen, Johnson, & Cohen, 1990; LaRusso, Romer, & Selman, 2008: Russ et al., 2007;

Shochet et al., 2006; Virtanen et al., 2009). Improvements have also been observed in the rates of absenteeism and school suspension (deJung & Duckworth, 1986, Gottfredson & Gottfredson,1989, Purkey & Smith, 1983; Reid, 1982; Rumberger, 1987; Sommer, 1985). In contrast, in schools with lower levels of school climate, students are more likely to experience violence, peer victimization, punitive discipline, and higher rates of absenteeism (Astor, Guerra, & Van Acker, 2010). Teaching and Learning was found to be one of the most important dimensions of school climate. A positive school climate where there are clear norms, goals, and values can translate into student's ability to learn (Thapa et al., 2013). Research has long supported the benefits of positive teacher student relationships, specifically, a positive relationship with a teacher in kindergarten can be related to positive behavioral outcomes later in life (Hamre & Pianta, 2001). Schools with poor organizational health can benefit from the implementation of Positive Behavior Interventions and Supports (Bradshaw et al, 2009). The effect may be seen in the readiness that teachers adopt practices and support each other in their learning (Aarons & Sawitzky, 2006; Bradshaw et al, 2009; Payne, Gottfredson, & Gottfredson, 2006).

The effects of a negative climate can be felt by both teachers and students. School climate can affect teachers' emotional exhaustion and attrition (Grayson & Alvarez, 2008; Higgins-D'Alessandro, 2002; Miller, Brownell, & Smith, 1999). Teachers are more committed to their profession when they feel supported by their colleagues and building administration (Singh & Billingsley, 1998). Grayson and Alvarez (2008) studied the factors of school climate that contribute to staff burnout. Participants included 320 teachers (e.g., included regular and special education teachers, music teachers, paraprofessionals, etc.) from 17 public schools. Participants completed the Comprehensive Assessment of School Environment survey which included the

Teacher Satisfaction Scale and the Teacher Climate Measure. To measure the level of burnout syndrome (emotional exhaustion, depersonalization, and reduced personal accomplishment) participants completed the Maslach Burnout Inventory-Educators Survey (Maslach & Jackson, 1981). Findings suggest that higher levels of burn out, specifically in the area of depersonalization (demonstrating cynical attitudes toward students, parents, or the workplace), was predicted by teacher relationships with students and administration (Grayson & Alvarez, 2008).

Teachers often leave the profession due to poor work environment (Johnson et al, 2012), specifically, social conditions, staff relations, culture, and leadership, are the greatest predictor of job satisfaction and career path (Bryk & Schneider, 2002). Further, work conditions influence academic growth (Ladd, 2009). Horng et al. (2009) found that administrative support is more important to teachers than salary and school demographics. Teacher stress is correlated to administrator support (Shernoff et al., 2011; Hakanen, Bakker, & Schaufelli, 2006).  Unfortunately, Teachers in struggling schools in low income areas are more likely to leave those jobs to work in higher income areas or leave the field all together (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2005). Schools with greater turn over have difficulty building systems and capacity also makes it hard for organizational culture to be built (Johnson et al., 2012).

Johnson, Kraft, and Papay (2012) studied 291 school districts in Massachusetts in order to shed light on the extent to which job conditions (e.g. facility and resources, time, community support and involvement, and school leadership) impact job satisfaction, career plans, and student performance. Using data from the Massachusetts Teaching, Learning and Leading Survey (MassTeLLs) concurrently with survey questions geared toward demographics, job

satisfaction, and career intentions. These data were analyzed along with school level data that was obtained through Massachusetts Department of Elementary and Secondary Education (DESE). Student achievement was measured using Massachusetts Comprehensive Assessment System (MCAS). The sample population included teachers and related service providers (e.g., school psychologists, guidance counselors). Based on previous research, using the MassTeLLs the researchers were able to align the items into nine different theoretical areas. These included Colleagues (relationships with colleagues serve to collaborate to solve problems within the school), Community Support, Facilities, Governance, Principal (maintains order and creates a safe instructional environment, addresses teacher concern, and provides meaningful feedback on instruction), Professional Expertise (recognized as experts and given autonomy to make decisions regarding instruction), Resources (access to materials), School Culture (environment is marked by mutual trust, respect, and staff are committed to student achievement), and Time (the extent to which staff have time to meet their job responsibilities (Johnson et al, 2012). Data were analyzed using a fit standard regression model in order to investigate the relationship between each outcome and overall work condition. Findings suggested that work environments are important to teacher retention. The work environment alone accounted for 29% of the variation in reported satisfaction compared to school demographics which only accounted for 6% of the variance. The context in which teachers' work is related to student academic performance. Further, collegial relationships, principal leadership, and school culture predicted both student achievement and teacher retention. Pairwise correlations found that positive collegial relationships, principal leadership, and school culture usually co-vary (Johnson, Kraft, and Papay, 2012).

Teacher burnout is all too common. Many researchers have studied the cause of teacher burnout and have found the following factors contribute to burnout: low control of classrooms, affiliation with one another, and perception of school leadership (Klassen & Chiu, 2011; McCarthy, Lambert, Beard & Dematatis, 2002; O'Brennan, Pas, & Bradshaw , 2017; Pas, 2012). O'Brennan et al. (2017) studied school connectedness as it relates to staff burnout. The researchers investigated staff level (demographics, perceptions of efficacy, connectedness and safety) as well as school level (student teacher ratio, suspension rate) factors. The purpose of the study was to investigate staff perception and school factors that are related to self-reported burnout. Data were collected from 3,225 high school staff across 58 schools in 12 districts. School staff completed demographic information, the Maryland Safe and Support Schools School Climate Survey to measure staff burnout, school safety, and staff-school connectedness. To measure self-efficacy teachers completed the Teacher Efficacy Scale). Further school contextual factors included if schools participated in PBIS implementation, suspension rate, FARMS rate). The researchers used hierarchical linear modeling. Findings suggested that personal, student, and administrative connectedness were negatively associated with burnout. Most importantly, staff who were experiencing low levels of burnout reported being better equipped to deal with challenging behaviors, suggesting, that in climates that are supportive of teachers and staff, students are better served (Skaalvik & Shaalvik, 2011).

Kokkinos, Panayiotou, and Davazoglou (2005) studied the implication of components of teacher burnout, personality traits, and demographics on the perception of severity of misbehavior (i.e., antisocial, oppositional/defiant, interpersonal sensitivity, inattention/restlessness, negative affectivity, inattention/carelessness). Findings suggested that the extent to which teachers experience high levels of emotional exhaustion increases the

negative perception associated with externalizing behaviors. Burned out teachers are more likely to refer students for disciplinary problems (Beer & Beer, 1992; Kokkinos et al., 2005). Relational support and connections to other teachers may be a buffer to burnout (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001).

## Organizational Health

In 1965, Miles, an applied behavioral scientist, wrote a theoretical piece out of frustration with how researchers interested in system change focused mostly on the individual innovator without regard for the organization of the system. He presented a conceptualization of organizational health which he defined as "the school system's ability to not only function effectively but to develop and grow into a more fully functioning system." He believed that an organization's ability to engage in any change effort relied on the overall health of the organization. Miles believed that organizations need to be goal focused, have communication adequacy, optimal power equalization, resource utilization, cohesiveness, morale, innovativeness, autonomy, adaption, and problem-solving adequacy (Miles, 1965). Based on the ten dimensions, Kimpston and Sonnabend (1975) attempted to create a measure to capture the organizational health of schools. They developed the Organizational Health Descriptive Questionnaire, unfortunately, when tested, factor analysis did not support the dimensions (Hoy, Tarter, & Kottkamp, 1991). Other attempts were made by different researchers, however, they remained unsuccessful.

Hoy and Feldman (1987) borrowed from the work of Miles in order to create a measure of Organizational Health. They believed that "healthy schools must meet the instrumental needs of adaptation and goal achievement as well as the expressive needs of the social and normative integration" for which school have three different levels of control including the technical

(teaching and instruction), managerial level (allocate resources, develop loyalty, trust and

motivation), and the institutional level (school/community agreement). Items were developed on

the Organizational Heath Inventory in order to measure technical, managerial, and institutional

level variables.  A version of the scale containing 95 different items was piloted in 72 secondary

schools. Once the data were collected, researchers conducted a factor analysis which yielded

seven distinct dimensions: Institutional Integrity, Principal Influence, Consideration, Initiating

Structure, Resource Support, Morale, and Academic Emphasis. Due to the differences between

secondary and elementary school and Organizational Health Inventory-Elementary School

Version was created through a series of pilot studies utilizing factor analyses. From their studies,

Hoy et al (1991) found five factors including Institutional Integrity, Collegial Leadership,

Resource Influence, Teacher Affiliation, and Academic Emphasis. Findings also suggested that

the strongest factor of organizational health was Teacher Affiliation which is aligned with

previous research.

The Organizational Health Inventory- Elementary School Version (OHI-E) has been used

in several peer reviewed studies. Bradshaw and colleagues (2008) aimed to determine the extent

to which the implementation of school wide positive behavior intervention and supports has an

impact on perceptions of school organizational health. When considering PBIS implementation it

was important that the schools included within the study adhered to the seven critical features of

PBIS. These include the establishment of a PBIS team, the creation of 3-5 positively stated

behavioral expectations, the expectations are defined and taught on a regular basis and a system

exists for reinforcing positive behaviors, there is a system for responding to behavior violations,

and a formal system exists to collect, review and problem solve with disciplinary data (Bradshaw

et al., 2008). To measure organizational health, Bradshaw and colleagues utilized the OHI-E

which is made up of the following five features: resource influence, staff affiliation, academic emphasis, collegial leadership, and institutional integrity. Related to resource influence, it was hypothesized that PBIS will increase staff's perception of access to personnel, meaningful professional development, and access to district staff. Perception of staff affiliation may be enhanced due to the role of PBIS emphasis on collaboration and joint decision making. Academic emphasis is expected to be enhanced to the existing research base suggesting a link between PBIS and academic achievement. Collegial leadership may be influenced due to the administrator's role within a PBIS team. If the principal is a leading member on the PBIS team staff may feel like they have the ability to communicate more with them. Participants included 1387 school staff (i.e., general education teachers and support staff) from 37 elementary schools where 58% were implementing PBIS participated in the study. The Organizational Health Inventory for Elementary Schools (OHI-E) was completed at baseline and then on an annual basis spanning four years. Multilevel modeling was used to determine the effect that the implementation of PBIS had on school Organizational Health. Findings suggested that the implementation of PBIS increased overall levels of Organizational Health, resource influence and staff affiliation (Bradshaw et al., 2008).

Mehta, Atkins, and Frazier (2013) used to OHI-E in high poverty urban schools in order to determine if the five-factor structure was applicable in urban schools and to ascertain the extent to which school health is associated with teacher efficacy, teacher stress and job satisfaction. Mehta et al (2013) methodology included having the 203 teachers participating in the study complete the OHI-E, Quality of Teacher Work Life Survey, and the Ohio State Teacher Efficacy Scale, Short Form. Findings showed that the previously studied factors of organizational health are applicable in high poverty urban schools. However, the factor of

Resource Influence was two factors of Principal Influence and Material Influence suggesting that in urban schools, teachers may not feel that the principals have authority over obtaining materials due to lack of resources within the district. Additionally, the researchers found that Principals Support accounted for the most variance. Overall, teacher efficacy, job satisfaction, and teacher stress were related to organizational health especially, leadership, supportive peer relationships, and positive learning environment.

Debnam, Pas, and Bradshaw (2011) investigated the relationship between staff perceptions of administrative support for School Wide Positive Behavior Intervention and Supports (SWPBIS) including tier 2 and 3 interventions in relation to fidelity of implementation of SWPBIS. The researchers hypothesized that the fidelity of SWPIBS and school organizational health would be positively associated with perceived administrative support for SWPBIS (Debnam et al, 2011). In addition, the researchers believed that school level contextual factors including enrollment and mobility would be negatively associated with administrator support. This researcher was conducted in order to help better understand the contextual factors that led to strong implementation of tier 2 and 3 supports in order to better support students needing additional emotional and behavioral interventions (Debnam et al, 2011). Forty-five public elementary schools in Maryland participated in this study. The schools included in this study had been previously trained in SWPBIS and were currently implementing the practices, but were in the process of building up tier 2 and 3 supports. The measures included the OHI-E which yielded one organizational health score per participating school. Principal support for SWPBIS was measured through a three-item scale which asked the extent to which the principal allocates time and resources, is personally involved in the implementation, and the principal promotes PBIS within the school (Debnam et al, 2011). A similar six item scale was created to measure the

principal's support for tier 2 and tier 3 supports. Fidelity of SWPBIS and tier 2 and tier 3 interventions were measured through the use of the School-Wide Evaluation Tool (SET) and the Individual Support Systems Evaluation Tool (I-SSET), respectively. Hierarchical Linear Modeling was used to determine the fit of three two-level models. Organizational health was found to be positively correlated with staff perceptions of SWPBIS support. It was found that for every one-point increase on the school organizational health total there was a 1.6-point increase for support for SWPBIS (Debnam et al, 2011). Support for tier 2 and tier 3 supports was related to staff position. Classroom teachers were less supportive of tier 2 and tier 3 support than special educators and support staff. Again, higher levels of organizational health were related to support for tier 2 and 3 interventions. Schools with low levels or organizational health staff perceived lower levels of administrator support for tier 2 and tier 3 interventions (Debnam et al, 2011).

Bevans et al., 2007 investigated the interactions between the different staff and school level factors that influence perceptions of organizational health. The researchers obtained data from staff members working full time from 37 different schools which yielded 1395 respondents. The measures included the organizational healthy inventory, demographic questionnaire, and school characteristics (i.e., student enrollment, staff turnover, mobility rate, and number of students receiving free/reduced meals) which were obtained from the State Department of Education. Student outcome measures included student attendance, suspension rate, and reading and mathematics achievement based off of state standardized testing. Hierarchical Linear Modeling was used to analyze the staff- and school-level factors that predicted perceptions of organizational health. Important school-level characteristics included high staff turnover rates were correlated with lower levels of staff affiliation, new teachers in larger schools tend to also rate lower levels of staff affiliation, and socioeconomic status influence non-administrator

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perceptions of organizational health. Related to individual characteristics, perceptions of climate depended on the role. For example, principals tended to rate leadership and staff relationships as more positive than other staff members. In addition, members of minority groups also rated relationships to be less favorable.

O'Brennan, Bradshaw, and Furlong (2014) investigated the relationship between teacher perceptions of school factors and how their perceptions relate to their reports of students' problem behavior at the elementary level. Using hierarchical linear modeling, the researchers investigated the relationship between teacher reports of problem behavior and classroom behavior patterns (including prosocial behaviors), classroom behavior strategies and perceptions of school climate. The researchers hypothesized that demographic information would account for some variation in teacher reports of problem behavior and behavior management strategies. In addition, researchers hypothesized that teacher perception of a positive and supportive work environment would lead them to report fewer student behavioral incidents. Data were collected from 8750 students between grades one to five, in 467 classrooms across 37 schools in five different school districts. The Teacher Observation of Classroom Adaptation-Checklist (TOCA-C) was used to capture teacher's perceptions of student behavior across three domains (i.e., Problem Behavior, Concentration Problems, and Prosocial Behavior). Classroom behavior management was measured by The Effective Behavior Support Survey (EBS) which looks at the extent to which teachers use positive based behavioral strategies in their classrooms. Lastly, the OHI-E was used to capture teacher's perceptions of school climate. Findings suggest that school climate was significantly related to teachers' reporting of problem behavior. In detail, schools with positively rated school climates reported fewer negative behaviors within their classrooms.

## Advice Seeking

Teaching is a stressful occupation that requires an individual to fulfill many different roles. Stressors include the organizational culture of the school (e.g., lack of trust in professional abilities, poor working conditions, ineffective leadership), student misbehavior, disciplinary problems, lack of student motivation, alienation and isolation, and low student achievement (Howard & Johnson, 2004; Tater, 2009). Teacher stress has been defined as a negative feeling or emotional state (e.g., anger, frustration, tension, depression, low self-esteem) resulting from the work demands of teaching (Kyriacou, 2001). Research has organized the ways in which teachers cope with job stress into two different categories palliative, reducing the impact of a stressor, and direct action, eliminating the source of stress (Kyriacou, 2001; Howard & Johnson, 2004). Examples of palliative methods include drinking, smoking, avoiding, exercise, hobbies, and meditation. Direct action techniques include seeking support from colleagues, having positive relationships outside of work, organization, and time management. Howard and Johnson (2004) studied the resilience factors and coping techniques of emotionally well-adjusted teachers working in stressful teaching environments using qualitative methods. Participants were selected if they were considered to be 'at risk' of stress and burnout over time. School environments were rated using the Disadvantage Index and only teachers working in schools earning a score of one were included. Principals of the three selected schools identified staff who were considered to be resilient with the help of a screening tool. The participants partook in a semi-structured interview. Teachers reported the following stressors: non-compliant and unmotivated students, violence toward other students and staff, students experiencing trauma or other adverse childhood experience, workload pressure, difficult relationships with colleagues, and changes to the organization (e.g., administrative changes). Teachers who appeared to be handling job stress

effectively reported utilizing effective classroom management strategies, managing relationships with colleagues professionally, managing time and workload, and being flexible with change. Teachers experiencing higher levels of stress had more difficulty with classroom management, toxic relationships with colleagues and often blamed others for challenging events. Findings suggest that having a strong sense of agency, a support group, and pride in personal achievements were important protective factors (Howard & Johnson, 2004).

Advice seeking behavior is considered to be a direct-action technique used by teachers to combat stress. Tatar (2009) studied help seeking, which in this paper will be used synonymously with advice seeking, behavior between teachers as a coping strategy to stress. Tatar drew from the work of Offer and Schonert-Reichl (1992) to define help seeking "help-seeking behavior is the attempt of the individual to cope with a problem through the use of some source of support, aimed at enhancing the probability of ameliorating the intensity of the problem or even of resolving it" (Tatar, 2009, p. 109). However, organizational factors can play a role in teachers' ability to access support from their colleagues. Teachers having access to a support group acts as a group mediated coping strategy that reduces feelings of isolation and allows for collaboration between educators (Tarter, 2009). Help seeking is another coping strategy that is action focused. Deciding whether or not to seek advice from colleagues can be a challenging decision. Factors that impact one's decision include self-image and stigma (Tater, 2009).

Tater (2009) set out to map the different variables that relate to help seeking behavior. The variables included the different problems in which teachers cope with, self-referral considerations (e.g., relationship with individuals they are seeking help from), the type of support individuals receive, willingness to seek help, burnout and self-efficacy, as well as individual attributes. Teachers were asked to provide demographic information, complete a help

seeking attitudes questionnaire, report on sources that they sought out for support, the different

issues that they sought help for (e.g., pedologically/didactic/curriculum/behavioral/emotional),

the frequency that they turned for help, and the type of support they received (i.e., emotional,

instrumental, informational). In addition, the Maslach Teacher Burnout Inventory as well as the

Teacher Efficacy Scale were completed by participants. Tater (2009) found that teachers most

often seek out the support of other teachers. Teachers reported that emotional challenges of

students had been the most challenging to deal with. When determining who to turn to,

trustworthiness was the most important factor when choosing who to seek help from and in

general teachers were seeking out emotional and informational support most often. Teachers who

experience higher levels of problem behavior reported higher levels of burnout. Teacher burnout

was negatively correlated with help seeking behavior. When individuals felt more stressed, they

were less likely to turn to their colleagues for help.

Borgatti and Cross (2003) added more to the advice seeking literature drawing on

different approach to conceptualize and measure the topic. Deciding whether or not to seek

information from a colleague depends on many factors. Borgatti and Cross (2003) set out to

understand the relationship between different relational factors (i.e., knowledge, value, access,

cost and proximity) influence on advice seeking. In their research, knowledge was described as

the perception people hold of others' experiences. Value pertains to the evaluation of others

knowledge and skills. Access involves the ability to obtain information from a person within a

timely manner, and cost, includes "interpersonal risks" and "obligations incurred". Social

network data were collected from two organizations using "give info and get info approach"

where information seeking was measured by calculating the average of how often individuals

sought out someone and were sought out by the same individual. Results suggested the

knowledge, value, and access were important variables in determining the likelihood that one would seek out information from another (Borgatti & Cross, 2003).

## Social Network Analysis

To fully understand the methodology of Social Network Analysis one must first understand social networks. A social network is defined as either individuals or groups of actors and the relations defined between them (Wasserman & Faust, 1994). Actors are the social units that can include individuals or collective social units. For example, in social network analysis one may be interested in the students attending the local middle school or one may be interested in studying grade level teams. Relations or ties (i.e., the link between a pair) are the connections between actors. These can include behavioral interactions (e.g., who individuals talk to), physical connections (e.g., neighborhood where individuals grew up), affiliations (e.g., membership to a defined group), formal relations (e.g., employment hierarchy), transfer of material resources (e.g., business transaction), biological relationship (e.g. descent) (Carolan, 2014; Wasserman & Faust, 1994). Social Network Analysis allows for one to study the social structural environment and the structural variables that make up a network.

## Brief History of Social Network Analysis

The development of social network analysis occurred across many different pockets throughout the United States involving many different disciplines including anthropology, sociology, mathematics, mathematical biology, economics, political science and education (Freeman, 2004). This work primarily took place at many prominent universities including but not limited to Harvard, Massachusetts Institute of Technology, Iowa, Michigan, Columbia, and Syracuse.  Freeman (2004) described four features that are imperative to the paradigm of what researchers consider to be modern social network analysis. He writes "social network analysis is

motivated by a structural intuition based on ties linking social actors, it is grounded in systematic empirical data, it draws heavily on graphic imagery and it relies on the use of mathematical and/or computational models" (Freeman, 2004, p. 3).

Examples of the use of social network methodologies date back to the late 1800s with Macfarlane (1983) who was an algebraist. He used graphic imagery to visually display appropriate marriages. In 1875, researchers Galton and Watson (1875) conducted a study of inheritance using probability theory and a systematic network process in order to predict the extinction of certain family lineages (Freeman, 2004). Other examples from 1922 and 1936 included sociometric information like having children identify who they would like to invite to a party and recordings of who children played with.

According to Freeman (2004), the birth of Social Network Analysis was led by Jacob Levy Moreno who came to America in 1925 from Romania. When he arrived in America, he quickly found himself among scholars who would come together in collaboration to start to build up the many components of Social Network Analysis, Hellen Hall Jennings and Gardner Murphy, who had training in research mythology and statistics. Together Jennings and Moreno, conducted the Hudson School for Girls study. In this study 14 girls had run away in a two-week span. Sociometry was used to map the social setting in order to better understand the influence that the girls had on one another (Moreno, 1934).

Approximately a decade after Jennings and Moreno started their work together, they began to recognize that their approach was lacking a mathematical model. This led them to forge a collaborative relationship with Paul Lazarsfeld who was a mathematician at Columbia. Together, in 1938 they created a publication that contained the modern features of social network

analysis which resulted in gained traction among prominent researchers (Freeman, 2004), however, social network analysis was still not widely used at this time.

During the 1920s, at Harvard University, social structure was being studied with Lloyd Warner at the helm.  He investigated stratification focusing on the interactions between individuals. He worked along with George Elton Mayo. One notable research progress was the Western Electric Study of works productivity. They set out to focus on lighting and how lighting influenced productivity but shifted to psychological characteristics and how they related to worker productivity. Warner felt that they should take a structural approach and study inform ties between people. This deviated from Mayo's desire to study individual characteristics.  Their research primary utilized observation and looked at how the workers interacted with one another. The researchers graphed the relational ties but the work at this time did not include mathematical methods (Freeman, 2004; Mayo, 1933). Another hallmark study furthering the field of social network analysis was the deep south project conducted by Lloyd Warner. He was interested in studying social structure, culture, and race. This research was one of the firsts to collect and utilize two- mode network data to study cliques (Davis, Gardner, & Gardner, 1941; Freedman, 2004).

The 1930 brought advancements in understanding structure, however, a theme coming from this time was that the work lacked systematic data and mathematical tools (Freeman, 2004). Understanding where SNA needed to grow, Chapple and Arensberg tried to enhance the mathematical rigor associated with SNA. Their efforts began with creating operational definitions for SNA terms including "interaction" and developed methods to collect and analyze social interaction data. Chapple and Arensberg called on the expertise of Willard Quine who was a mathematician at Harvard University. This partnership led to an algebraic model for kinship.

At this point, all four features of modern SNA (i.e., structural institutions, systematic empirical data, graphic imagery, and mathematical and computational models) were present at Harvard University (Freeman, 2004). The researchers soon went their separate ways and ended up forming two different tracks of future study the case method approach and applied anthropology. Despite the work of these researchers and the advancements they made, this did not emerge as a research paradigm.

Freeman (2004) describes the 1940-1970s as the dark ages of social network analysis. Although contributions were made at this time, the methodology did not really grow or increase in use. Work continued in pockets at universities (i.e., Iowa, MIT, University of Michigan, Chicago, Columbia). Notably, in 1948 Alex Bavelas (MIT) published a paper describing the use of geometric approaches to allow for visualization of "psychological situations." This paper frequently referenced the work of Bavelas' teacher, Kurt Lewin, who unexpectedly passed away the year prior to this works publication (Freedman, 2004). In this work Bavelas wrote "The only reason for the use of geometry lay in the fact that the assumptions of groups of interrelated factors implied the existence of mathematical space and some means of handling it was necessary" (Bavelas, 1948, p. 16). In this work he illustrated the concepts of network shape, centrality, path length, and distance. He questioned the extent to which individuals can influence one another and the different implication of network position. Further on centrality, research at this time found centrality to be related to group problem solving, perception of leadership, and personal satisfaction (Freedman, 1979).

Mathematical applications were often missing in early work which led to more researchers consulting with mathematicians. As work continued mathematical foundations often utilized in network methods include graph theory, statistical and probability theory and algebraic

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models (Wasserman & Faust, 1994). Harary and Norman (1953) proposed theory of graphs as a model to be used in the social sciences, specifically when studying networks as a means to test hypotheses. Graph Theory was helpful to researchers for many reasons. Graph theory provided a common language for researchers to discuss social structure, it provided mathematical operations and concepts for how different proprieties can be measured, and most importantly, graph theory allows researchers to prove theories about social structure by utilizing graphic representations (Wasserman and Faust, 1994).

     **Diffusion of Innovation.** The beginning of one of the main concepts studied in social network analysis research found its roots in 1943. The concept of diffusion of innovation was first introduced by Ryan and Gross (1943) in their seminal paper describing the use of hybrid corn seed by farmers over a four-year span. They studied how information about the hybrid seed spread amongst farmers and how that information influenced the rate of adoption. Diffusion of innovation research traditionally involves four main elements: an innovation (e.g., an idea, invention, new practice), communication channels (e.g., how information spreads), time (e.g., time for the innovation to spread), and a social system (e.g., a social context) (Rogers, 2003). Findings from Ryan and Gross (1943) suggested that the rate of adoption of the hybrid corn seeds created in "S" shape. Initially the farms were slow to adopt the innovation and then there was a sudden spike that eventually leveled off. However, overtime, the rate of adoption will approach a normal distribution (Rogers, 1958). Rogers (1958) furthered diffusion of innovation theory through studying agriculture, specifically, by proposing adopter categories based on time of adoption to create consistency within this research. The proposed categories and the percentage of individuals making up the category are as follows: innovators (2.5%), early adopters (13.5%), early majority (34%), late majority (34%), laggards (16%). When an

innovation is not fully adopted a sixth category exists of nonadopters. Diffusion research has been conducted in many research fields including anthropology, sociology, education, public health, communication, marketing and management, geography, etc. (Rogers, 2003).

**Social Capital.** Granovetter's theory of strength of weak ties is often thought of as the precursor to social capital (Borgatti, Mehra, Brass, & Labianca, 2009; Granovetter, 1973). The theory posits that information spreads further between weak ties and is more likely to result in the sharing of novel information. Strong ties, often forming cliques, are likely to become circles of redundant information. For example, Granovetter (1973) studied individuals who recently found a new job through a contact. In a sample of 54 participants, 16.7% reported that the spoke with the contact that provided the crucial information often, 55.6% reported occasionally being in contact, and 27.8% reported rarely speaking with the contact who was able to provide the connection. Further described in this paper is the idea of trust. Individuals are more likely to trust a leader if they have a tie to someone who shares a tie with the leader and that tie can speak to the trustworthiness of the individual. The extension to social capital is the idea that individuals' ties provide access to information and resources (Borgatti et al., 2009; Burt, 2001).

In order to discuss social capital, one must define capital. Capital is often linked to Marx. Simply put capitalism is twofold representing the amount of surplus value earned by a tradesman (capitalist, seller, etc.) but also investments that are made with the surplus that will likely result in a greater surplus (Lin, 1999). Linn (1999) described Marx's views as a classical theory of capitalism whereas ideas like human capital (individuals can invest in themselves and can use knowledge and useful skills in trading (Schultz, 1961) and cultural capital ("reproduction of dominate symbols and meanings", Lin 1999) she referred to as neo capitalist Theories. Lin (1999) defined social capital as "investment in social relations with expected returns".

Colman's (1988) view of social capital was shaped by his desire to integrate to different theoretical perspectives. There was the sociological perspective which posited that actors are socialized and actions are governed by the social norms, rules, and obligations within a social context, meaning that the social context that one is in has a large impact on one's behavior. The economic perspective where actors have individual goals that are independent from the group and actions are of self-interest. Coleman believed that social capital was beneficial the both individuals and to the group.

Colman wrote in his 1988 work that social capital helps build human capital in individuals. He felt that social capital depends on the group norms, trust, and expectations within a social structure, the presence of information channels, and that the norms carried effective sanctions to help discourage behaviors that would not benefit the group. He noted the importance of social structure supporting social capitals specifically, network closure. Having network closure helps the group establish norms by providing sanctions, if groups do not have closure, it may be more challenging to create a system that individuals reciprocate the exchange of information in the future (Coleman, 1988).

Lin (1999) wrote about the issue of confounding variables with thinking of social capital as a collective good. She disagreed with the weight that Coleman placed on trust within a network. Although, it would be appropriate to research the relationship between network trust and the accessibility of resources within one's network, the concern comes from the fear of collective assets (e.g. trust) will be used interchangeable with social capital or to define social capital (Lin, 1999). Their views differed on that of network closure as well, she believed that having network closure was not always realistic or necessary (Lin, 1999). Arguing that network closure empowers social capital would also be at odds with the works of Granovetter 1973 and

Burt (1992) which speaks to the power of bridges, structural holes, and weaker ties (Lin, 1999).

Granovetter defined a tie strength as being based on the combination of the amount of time, emotional intensity, intimacy, and the amount of reciprocal services (Granovetter, 1973). Again, referring to the strength of weak ties, strong ties often indicate that individuals have a lot in common. When relationships are marked by weaker ties, it is less important that they are similar and that agree. Weaker ties serve as bridges and allows for better integration into different groups whereas strong ties lead to more cliques and can have a negative effect on the spread of information (Granovetter, 1973). In addition, dense networks can also suggest more redundancy and are less likely to generate novel information. Despite disagreement on the social capital, Burt (2001) points out a commonality. "…social structure is a kind of capital that can create for certain individuals or groups a competitive advantage in pursuing their ends. Better connected people enjoy higher returns" (Burt, 2001, p. 32).

Burt's structural hole theory considered "social capital as a function of brokerage opportunities" (Burt, 2001, p. 34). Within networks there are often groups of actors (whether be individuals or teams/groups) that cluster together. When these groups are not strongly connected, it is considered a structural hole. Those holding a position where they are able to connect groups of people are thought of as bridging a structural hole. These individuals are able to control the follow of information and have a unique advantage (Burt, 2001).

Hansen (1999) investigated knowledge sharing between organizational subunits due to discrepancies between theories within social network research and product innovation research. More specifically, does tie strength depend on the complexity of the knowledge shared?  Product innovation research suggests the opposite of strength of weak ties theory in that strong ties between organizational subunits leads to improved outcomes and project effectiveness. Hansen

(1999) found that strong ties had the most positive impact on project completion time when the knowledge involved was highly complex. Weak ties were beneficial when knowledge was not considered to be highly complex. Weak ties often helped with the acquisition of new knowledge but strong ties aided in the transfer of complex knowledge. Weak ties were also considered beneficial because there is less cost associated to maintain them as they require less time.

## Social Capital and Education

Social capital has been studied in schools in relationship to improvement efforts. Daly, Moolenaar, Der-Martirosian, and Liou (2014) studied social capital and its relationship to enhancing students' literacy by measuring teacher interactions and using formative reading comprehension assessment tools. Daly et al. (2014) shed light on the position that many schools find themselves in when attempting to increase student achievement in that most school try to enhance individual's human capital by adding professional development training, although this may be true, Daly et al. (2014) argues that "human capital is developed, enhanced, and shared through social interaction and collaboration resulting in additional knowledge available to the system" (p. 5). For this reason, it is imperative to enhance the field's understanding of the relationship between teacher interaction and student achievement (Daly et al., 2014). In order to measure social capital, in a sample of 63 teachers and 1196 students across five elementary schools, from a roster, teachers were asked to "select the frequency of interaction with teachers with whom you share knowledge regarding reading comprehension" on a four point scale ranging from 1-2 times in six months to one to two times per week. Social capital was measured using in-degree and out-degree where a higher in-degree suggests that someone is frequently sought out for support. Reciprocity was also measured using ego-reciprocity with the belief that reciprocal relationships may be more likely to create a dynamic of deep knowledge sharing and

the ability to build on a community of practices. Individual human capital was measured by the amount of years teachers spent within the profession and within their current school. The dependent variable, student reading outcomes, were measured using the English Language Arts Interim Benchmark Assessment. Daly et al. (2014) used hierarchical linear modeling to measure the extent to which social capital influenced student achievement. Results concluded that teacher's human capital (years at school) was correlated with student achievement. Also, social capital (out-degree) was correlated with length of time spent teacher in a particular school. Findings supported the researcher's hypothesis that, social capital (out-degree and ego reciprocity) was correlated with higher student achievement. "The more teachers seek out others to share reading comprehension knowledge (out-degree) and the less they engage in mutual knowledge exchange (ego-reciprocity), the higher the achievement of students on the ELA interim benchmark assessment" (Daly et al., 2014, p. 22)

Connections and network position are important when it in comes to information flow, however, this does not suggest that having more ties is necessarily better. Previous research has found that strong ties are more valuable to spread information within organizations. Siciliano (2016) researched advice networks and self-efficacy. Positive self-efficacy in teachers has been shown to have positive effects in student outcomes (Siciliano, 2016), in addition, one's social network may impact one's self-efficacy perceptions. Siciliano (2016) investigated how social network structure affect self-efficacy believes. Siciliano's research investigated the relationship between advice seeking and teacher self-efficacy, advice sharing and self-efficacy, the relationship between one's own self-efficacy and of the peers that surround them, and the relationship between network position of the principal with teacher self-efficacy. Data were collected from 21 schools from a midsized urban district (17 elementary, 2 middle school, and 2

high school). Data on self-efficacy, collaboration, organizational and professional commitment, instructional leadership and demographic information was all captured through the completion of a survey. Many items came from the Consortium on Chicago School Research. Professional commitment was chosen as a measure as previous research has identified links between one's commitment to an organization and their willingness to help others. Network variables were captured through the use of a roster of co-workers where participants were asked to indicate the individuals that they sought out or gone to for advice in order to strengthen practice, lesson planning, classroom management, etc. Participants were also asked to indicate the frequency of their interactions on a 5-point scale ranging from never to daily. From this data, advice networks were created for each school. Centrality was measured using in-degree, out-degree with an adjusted alpha (1.5) due to the complexity of calculating centrality with weighted ties. The belief is that strong ties aid in the transfer of complex knowledge. Overall network density was also calculated. Overall, findings suggest that one's knowledge access and peer influence are associated with self-efficacy. However, support was not found for the quality of ties on self-efficacy (Siciliano, 2016).

Leana and Pil (2006) utilized survey methods to investigate how social capital relates to organizational performance within urban educational settings. In their study they investigated both internal (structural, relational, & cognitive) and external (connections outside the network) social capital. Leana and Pil (2006) hypothesized that with higher levels of internal social capital, there will be higher levels of school performance. In addition, it was hypothesized that higher levels of external social capital will also be associated with better school performance. The researchers also hypothesized that quality of instruction will be mediated by the relationship between internal/external social capital and student achievement. Included in this study were 95

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urban schools (59 elementary, and 36 middle, secondary, and specialized schools). The study began with qualitative assessments including semi-structured interviews with principals and teachers. From the interviews, the researchers created surveys. Teachers completed surveys that measured internal social capital across the three facets. Principals were asked to keep a time diary for one week. Achievement testing was used as the primary outcome measure to determine school performance. Quality of instruction was captured by a parent satisfaction survey. Findings suggest that internal and external social capital are significantly related to test scores, therefore, social capital is correlated with organizational performance within schools (Leana & Phil, 2006).

Moolenaar and Sleegers (2010) set out to answer the question "to what extent do characteristics of educators social networks affect school climate, as mediated by trust?" (p. 2). In a study of 775 educators across 53 schools, they hypothesized that schools with network characteristics including higher density, reciprocity, and centralization would positively impact teachers' perceptions of the school's innovative climate, more relationships will increase teachers' trust, trust will mediate the relationship between network characteristics and climate. Social networks were measured by asking educators "Whom do you turn to in order to discuss your work?" and "Who do you regard as a friend?". Innovative climate was measured by a scale developed by Consortium on Chicago School Research that captured the extent to which the schools were change-oriented and innovation supportive. Trust was measured by the "trust in colleagues scale". Findings included that schools with higher density tended to be rated as more innovative and dense communication networks regarding work topics had higher levels of trust. Thus, suggesting that networks characterized by trust may be more open to change.

## Conclusion

The behavioral needs of students' have been increasing over time. Effective intervention requires complex understanding of behavioral interventions and supports. Schools that have a healthy school climate, are more likely to adopt change, and are more likely have better developed communication networks and therefore knowledge and expertise may be more efficiently transferred among staff in need. Social network analysis provides both the theory and mathematical approaches to be able to further explore the relationship between organizational health and advice seeking behavior of school staff.

# CHAPTER III

## METHODOLOGY

### <u>Introduction and Statement of Problem</u>

Organizational health, including staff affiliation and perception of leadership, have been associated with many school outcomes including rate of burnout, retention, job satisfaction, perceptions of problem behavior, absenteeism, and suspension rates (Johnson et al, 2012; Klassen & Chiu, 2011; McCarthy, Lambert, Beard & Dematatis, 2002; O'Brennan et al, 2014; O'Brennan et al , 2017; Pas, 2012). O'Brennan, Bradshaw, and Furlong (2014). Collegial support can serve as a protective factor in managing the challenges associated with teaching (Howard & Johnson, 2004). Advice seeking is a strategy that teachers can use to combat job stress. Drawing from Tater (2009) and Offer and Schonert-Reichl's (1992) definition of help seeking, it can be defined as a direct action technique utilized by school staff to help them cope with challenges through the use of support that's purpose is to ameliorate the intensity of the problem or, in some cases, resolve it. Unfortunately, there may be environmental conditions that increase the likelihood that teachers will demonstrate reluctance to seek advice. There may be consequences to staff avoiding reaching out to their colleagues for advice. If individuals do not share social interactions and collaborate with one another individuals will likely miss out on knowledge, strategies, and techniques that exist within the network. Communication networks have been studied in educational settings using Social Network Analysis (Daly et al., 2014). Social Network Analysis allows for one to study the social structural environment and the structural variables that make up a network.

The purpose of this study was to investigate the relationship between organizational health and the advice seeking networks of school staff regarding students exhibiting social,

emotional, or behavioral concerns. This research will shed light on the organizational factors that influence advice seeking among teachers/staff. In addition, this study aimed to explore the impact that organizational health and advice seeking behavior had on behavioral climate (e.g., attendance, suspensions, office disciplinary referrals).

## Research Questions

This study investigated the following research questions through Social Network Analysis and canonical correlation analysis:

1. What does the advice seeking communication network of licensed school staff look like across schools?

2. What does access to behavioral expertise across both networks look like? What is the reachability of support staff?

3. To what extent do advice seeking behaviors of individuals depend on perceptions of organizational health?

## Design and Hypotheses

The purpose of this study was to explore the relationship between the domains of organizational health, advice seeking patterns, and the behavioral climate. This study primarily utilized Social Network Analysis (SNA) of the whole network of licensed professionals as a way to form the methodology and analyze the data mathematically and visually. In addition to SNA, the study also used canonical correlation to explore the above research questions. Canonical correlation, similar to multiple regression, allows the researcher to investigate multiple variables by forming two sets of variates (Sherry & Henson, 2005; Tabachnick & Fidell, 2007). Unlike other ways to analyze relationships among variables, canonical correlation does not necessarily designate an independent variable and a dependent variable, but rather the relationship between

two sets of independent variables are tested. When setting up canonical correlation, variables are arranged on two different sides of the equation, each side forming a variate. This type of analysis allows the researcher to investigate the correlation between the variables forming the variate (each side of the equation independently). Also tested is the correlation between the variates (between sides of the equation), and how the individual variables account for variance regardless of where they are within the equation (Sherry & Henson, 2005; Tabachnick & Fidell, 2007). The following hypotheses were made in regard to the study's research questions:

(H1): The structural properties will vary across the two schools in terms of density and connectedness. Further, individuals with behavioral expertise or positional authority will hold more central positions within their networks. Also, hypothesized is that individuals who are newer to the district will be less connected and are more likely to be isolates.

(H2): Those with behavioral expertise will be highly accessible by all network members, therefore they will hold central positions. These members will have higher than average in-degrees and Inbeta reach.

(H3): A strong relationship will be found between Organizational Health (i.e., Collegial Leadership, Staff Affiliation, and Institutional Integrity and advice seeking behavior (in-degree, out-degree, beta-in, & beta-out). Staff Affiliation will likely account for most of the variance, meaning that positive staff affiliation will be associated with high rates of advice seeking behavior.

## Setting and Context

Data for this study were collected at two urban elementary schools within one Maryland school district (n=64). In 2015, the large urban district had 84,976 students enrolled in 210 schools. Eighty-three percent of enrolled students identified as African American, 8% White, and

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7% Hispanic. The district graduated 70% of students and 83.6% qualified for free or reduced meals. In 2017, School 1 had 545 students enrolled in grades pre-kindergarten through fifth grade and School 2 had 385 students enrolled. The demographic breakdown for School 1 is as follows: 60% Hispanic, 27 % White, 10% African American, and 2% Asian, 48% female. In School 2 42% identified as White, 37% African American, 12% Asian, and 48% female. In School 1 55% of students qualified for Free and Reduced Price Meals and 28% qualified in School 2.

## Recruitment

This study was approved by the University of Massachusetts Amherst Institutional Review Board (IRB) as well as the IRB of the district. After gaining approval relevant information was shared with elementary school principals in order to find volunteering schools. Ideally, schools to be included were ones of similar size with similar demographics to reduce the presence of confounding variables. Once principals consented to participate, consent was sent to individual staff along with the study questionnaires. After contacting several building principals, three schools agreed to participate. However, only two schools yielded acceptable response rates (School 1= 90%, School 2 = 92%), therefore, two schools were included in the study.  Schools were compensated for their time by access to aggregated scores on the organizational health inventory. Individuals were compensated for their time as participants by entry to a raffle.  All participants were required to sign an informed consent form before beginning the Licensed Professional Survey and Organizational Health Inventory.

## Participants

Participants of this study included all licensed professional staff members employed at two participating elementary schools.  For this study, licensed professionals included any and all

individuals (e.g. teachers, specialists, administrators, social workers, school psychologists) working under a state issued license in their related area of expertise. To be included in this study the licensed professional must have been employed by the district and assigned to their respective school at least half-time on a full year contract. Tables 1-4 depict demographics information of the participants within each school.

Table 1

Staff Members and Response Rate

| School | Total Staff Member | Completers | Response Rate |
|--------|--------------------|------------|---------------|
| School 1 | 43 | 39 | 90% |
| School 2 | 27 | 25 | 92% |

Table 2

School Staff Gender

| School | Male | Female |
|--------|------|--------|
| School 1 | 4 | 35 |
| School 2 | 6 | 25 |

Table 3

School Staff Race and Ethnicity

| Race | School 1 | School 2 |
|---|---|---|
| White | 30 | 17 |
| African American | 5 | 4 |
| Asian | 2 | 3 |
| Multiple | 2 | 0 |
| Opt-out | 0 | 1 |

Table 4

School Staff Titles

| Title | School 1 | School 2 |
|---|---|---|
| Teacher | 20 | 12 |
| Administrator | 3 | 2 |
| Lead Teacher | 0 | 1 |
| Special Education Teacher | 5 | 4 |
| English for Speakers of other Languages Teacher | 3 | 1 |
| Resource/Specials | 4 | 3 |
| School Psychologist | 1 | 1 |
| Speech Pathologist | 1 | 0 |
| Reading Specialist | 1 | 0 |
| Social Worker | 1 | 1 |

## **Measures**

**Organizational Health Inventory for Elementary Schools (OHI-E).** The

OHI-E is a validated measure created by Hoy et al. (1991) that is commonly used to investigate

the organizational health of elementary schools. All participants completed the 37 item scale

measuring five factors including; institutional integrity (the institutions ability to cope with external forces that may disrupt/alter the mission), collegial leadership (the behavior of the administrator is friendly, supportive, open and demonstrates value of staff members), resource influence (the principals' ability to obtain supplies and materials needed by staff), teacher/staff affiliation (speaks to the staffs bond and commitment to school, staff and students) and academic emphasis (expectations for academic performance is high among staff and students, students value good grades). Obtaining a score of 500 in any of the indices suggests that the school is considered average and a score of 600 suggests that score is higher than 84% of schools (Hoy & Tarter, 1997).

## School Networks

**Licensed Professionals Survey.** Survey data regarding individuals' advice seeking networks were collected from licensed professionals in order to capture the schools' advice seeking communicative networks. Staff members were asked to identify from a roster the individuals they have contacted and received helpful advice regarding concern about individual or groups of students' social, emotional, or behavioral functioning throughout the past three months. Advice was defined as any conversations with the goal of strengthening routines and practices, behavioral intervention ideas, classroom management, or for other related reasons. The survey also contained demographic questions including education, length of employment, race, ethnicity, and gender. Licensed professionals were not asked to report on other staff members that seek advice from him or herself. Each staff member completed the survey through Qualtrics.

**Principal Survey.** Interviews were conducted with the building principals of the two participating schools. Topics discussed included student behavioral climate data such as number of office disciplinary referrals, suspensions, and attendance. Student variables were collected in

order to investigate the relationship between advice seeking patterns and student behavioral climate. Many studies have utilized the use of disciplinary referrals and suspensions disciplinary referrals and suspensions as a way to capture problematic school behavioral climates (Dwyer, Osher, & Warger, 1998; Irvin, Tobin, Sprague, Sugai, & Vincent, 2004; Morrison et al., 2001). Further, Irvin et al. (2004) documented the validity of using office disciplinary referrals to measure school behavioral climate.  The following data were collected to capture the student behavioral climate at each participating school.

**Attendance rate.** The average percentage of days that students enrolled in grades K-5 are in attendance.

**Office disciplinary referrals.**  The percentage of students enrolled in grades K-5 who received two or more formal documentation of office referral.

**Out-of-school suspension rate.** The percentage of students enrolled in grades K-5 who received one or more out-of-school suspensions.

**In-school suspension rate.** The percentage of students enrolled in grades K-5 who received one or more in-school suspensions.

<div align="center">

**Procedures**

</div>

**Data Collection**

Organizational health and advice network data were collected from participating licensed professionals via an online survey tool (i.e., Qualtrics) during whole staff/grade level meeting times. Some professionals completed the survey on their own time. The survey began by obtaining informed consent, demographic information, followed by the organizational health inventory and the Licensed Professional Survey. Data were collected during the spring

benchmark. The survey required individuals to reflect on their advice seeking behavior over the past three months.

After the Licensed Professional Survey was completed at each school, meetings were held with the building principals to provide school-based data.  The principals reported aggregated student data (attendance, in-and-out of school suspensions, and office disciplinary referrals).

## <u>Data Analysis</u>

The primary methods for analyzing this study was Social Network Analysis (SNA).  SNA is a mathematical and visual approach to understanding the complex dynamics occurring within a social network.  UCINET 6 and NetDraw software facilitated the analyses.  Adjacency matrices were created for each network as well as visual representations of communication ties called sociograms. Sociograms allow for the study of data at the node and graph level. The sociograms will depict demographic information and different attributes obtained through the Organizational Health Inventory. In addition to the sociograms, various network properties were including, centralization, density, diameter, distance, and reciprocity. Although network data were collected on a five-point likert scale, data were dichotomized, meaning that if some responded that they sought out and received advice from someone twice, that was coded to a zero suggesting that a tie does not exist. Three, fours and fives were coded into a one representing a directional tie.

### Data Analytic Plan by Research Question

1. **What does the advice seeking communication network of licensed school staff look like across schools?**

This question was first addressed using Visual Analysis to depict the communication network across schools. This process allowed network differences to be highlighted through the creation of sociograms. Visual analysis allows the researcher to identify actor positions (isolates, pendulums, hubs, bridges, and cliques). Directed ties will allow for readers to understand the direction that information flows from actor to actor. The following whole network characteristics were calculated to further understand the communication network's structure.

*Density.* Density was calculated for each network. Network density is calculated by taking the sum of all possible ties then dividing by the number of existing ties. If all possible actors have relations within a network, then the density would be calculated as 1. It is important for actors within the network to have ties to one another as it is through ties that actors gain access to instrumental and expressive support. A moderate density score would suggest most network members have adequate access to support.

*Connectedness.* Connectedness is a measure of group cohesion that is calculated by taking the proportion of pairs of actors that can reach each other by a path of any length. Connectedness depicts the accessibility of actors, or information, within a network. Highly connected networks are represented by values close to 1.

*Distance.* Distance investigates how far actors are within a network from one another. A more cohesive network will have a smaller distance value. For example, if the distance was three, that would indicate that most members within the network are about three steps away from other network members. In this study, distance was calculated by calculating the distance between actors.

*Diameter.* Diameter numerically demonstrates the longest path between two

actors within a network. Diameter depicts how far a peripheral actor has to travel to reach the next furthest actor.

*Reciprocity*. Reciprocity investigates the percentage of relationships where advice flows in both directions, whereas if Actor A seeks advice for Actor B, Actor B also turns to Actor A for advice. Reciprocity is calculated by tallying the number of reciprocal ties and dividing by the total number of ties within the network.

2.    **What does access to behavioral expertise across both networks look like? What is the reachability of support staff?**

Research question two was addressed by studying two centrality measures of the actors with behavioral expertise. Two centrality measures were utilized including Degree Centrality and Beta Centrality (Bonacich Power). Visual representation of network position and Bonacich Power are presented in Figures 3 and 4.

*Degree Centrality.* Degree Centrality allows for the study of nodes' position within the networks. Since the data are directed, both Indegree and Outdegree are reported. Indegree represents the number of incoming ties that an individual actor has, representing the percentage of individuals within the network that seek their advice. Outdegree represents the percentage of individuals that the actors seek advice.

*Bonacich Power***.** Bonacich Power, also referred to as Beta Centrality, is a measure of potential influence that an individual node can have on those that they are both directly and indirectly connected to. This measure takes into consideration a degree centrality and eigenvector centrality by setting a beta value and comparing the length of walks from point to point. The theory behind Bonacich Power is that it is more important that one is connected to actors that are well connected other than having the same number of connections to those who

are more isolated. Beta centrality is calculated by taking into consideration the length of the walk (how far actors are from one another) compared to the set Beta Value (School 1= .079, School 2=.091). Beta determines how much to weight long walks in order to determine the amount of influence a node might have on others.

Following the calculation on Degree Centrality and Bonacich Power, sociograms were created to depict a ranking of the amount of power nodes have within the network. The red nodes represent the actors with behavioral expertise.

3. **To what extent do advice seeking behaviors of individuals depend on perceptions of organizational health?**

Research question three compared the relationship between organizational health and the advice seeking network of licensed professionals within each network through the use of canonical correlation analysis. Staff Affiliation, Collegial Leadership, and Institutional Integrity were grouped on one side of the equation forming the Organizational Health Variate. The second variate, Advice Seeking behavior, was composed of the centrality measures Degree Centrality (Indegree and Outdegree) and Beta Centrality (Inbeta and Outbeta). All network measures were calculated based on directed, non-valued networks. Canonical correlation analysis allows one to study the relationship between the two variates (Organizational Health and Advice Seeking), the extent to which the variate on one side relates to the variables that form it (e.g., the relationship between Staff Affiliation, Collegial Leadership, and Institutional Integrity), and the relationship between the variate on one side of the equation of the variables on the other side of the equation. In order for one to conduct canonical correlations the number of cases needed is approximately 10 cases for every variable. In this study, seven variables were used and there were 65 cases (Tabachnick & Fidell, 2007). In addition to canonical correlation analysis, sociograms were also

created to allow for visual analysis. Node size in Figures 5 and 6 were determined by individuals'

overall Health Index score.

# CHAPTER IV

## RESULTS

### Introduction

The purpose of this study was to investigate the relationship between the organizational health within a school setting and the advice seeking networks of school staff around students exhibiting challenging social, emotional, or behavioral problems. The study took place in two elementary schools within a large urban district in Maryland. The following research questions aimed to explore advice networks of school staff responding to the social, emotional, and behavioral needs of their students: what individual actor attributes are contributing to advice seeking behaviors? How reachable are staff members with behavioral expertise? To what extent are perceptions of organizational health related to willingness to seek advice? Do these communication networks support the sharing of effective behavioral practices?

School 1 and School 2 were highly connected and dense advice seeking networks. Behavioral support staff and administrators are mostly central to within their respective networks. School 1 and School 2 both had high levels of Organizational Health. Behavior data for School 1 and School 2 are provided in Table 5. Captured in Table 5 are Attendance Rate (i.e., the average percentage of days that students enrolled in grades K-5 are in attendance), Office Disciplinary Referrals (i.e., the percentage of students enrolled in grades K-5 who received two or more formal documentation of office referral),  Out of School Suspension Rate (i.e., the percentage of students enrolled in grades K-5 who received one or more out-of-school suspensions), and In School Suspension Rate (i.e., the percentage of students enrolled in grades K-5 who received one or more in-school suspensions).

Table 5

Attendance and Discipline Rates

| School | Attendance Rate % | Office Disciplinary Referral Rate % | Out of School Suspension Rate % | In School Suspension Rate % |
|--------|------------------|------------------------------------|--------------------------------|------------------------------|
| School 1 | 94.7 | 1 | 2 | 0 |
| School 2 | 96.3 | 6 | 2 | 0 |

The findings from the first research question include: 1) visual analysis of the advice seeking networks and 2) network characteristics. Findings for the second research question include: 1) visual analysis of ego networks of staff with behavioral expertise and 2) network properties of these individuals. For the third and final research question findings include: 1) Organizational Health Inventory results 2) visual analysis and 3) canonical correlation analysis.

## Research Question One: What does the advice seeking communication network of licensed school staff look like across schools?
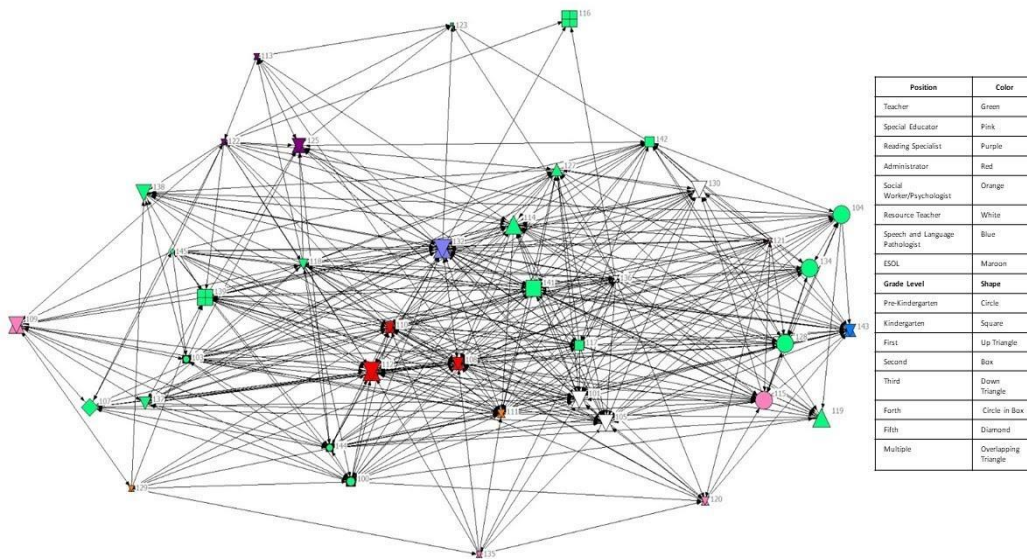
### Network Analysis

Analysis of the whole network was conducted at two separate elementary schools in order to capture the structures and patterns that describe the advice seeking network. Network analysis captures the overall density of the network as well as determines the actors (i.e., staff members) more central to the network meaning that they likely possess greater influence over the network. Visual analysis was the first step in investigating the communication patterns within both School 1 and School 2.
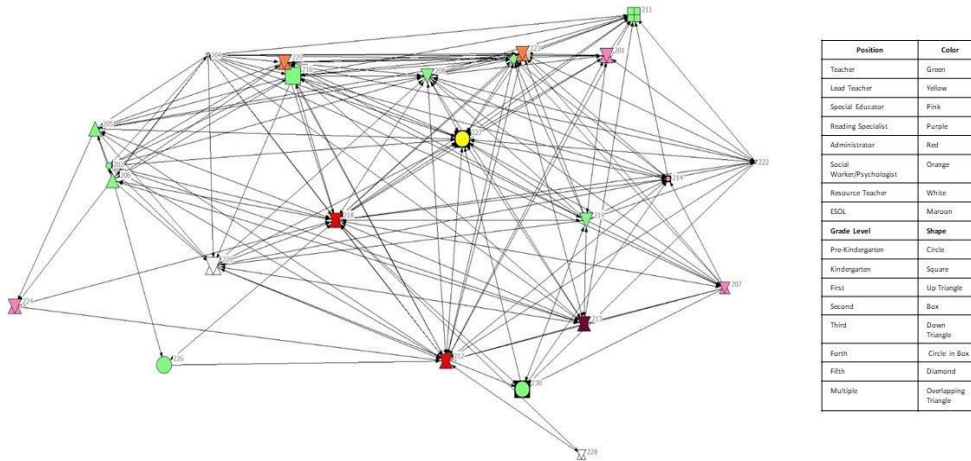
The figures below, (Figures 1 and 2), illustrate through visual representation of the advice seeking networks at the two schools. Visual analysis allows for the creation of a graphical representation of the positions each actor holds within their network as well as the ties that connect them. Each node, actor, was assigned a color, shape, and size coded to depict their professional title, grade level, and length of employment, respectively. Each line represents a directed tie which describes the flow of advice seeking. Meaning that if a line exists from one actor to another, that actor has sought out and received advice from that individual. The graphs have been arranged based on the geodesic distances between nodes. Geodesic distance is measured based on the number of links in the shortest path between two nodes. Nodes that are on the edge of the sociograms are indicative of a high geodesic distance meaning it takes more steps for these actors to access members of the network. The nodes that are more central (influential) to the network are positioned in the center of the map.

Figure 1. School 1 Advice Network



| Position | Color |
|---|---|
| Teacher | Green |
| Special Educator | Pink |
| Reading Specialist | Purple |
| Administrator | Red |
| Social Worker/Psychologist | Orange |
| Resource Teacher | White |
| Speech and Language Pathologist | Blue |
| ESOL | Maroon |
| Grade Level | Shape |
| Pre-Kindergarten | Circle |
| Kindergarten | Square |
| First | Up Triangle |
| Second | Box |
| Third | Down Triangle |
| Forth | Circle in Box |
| Fifth | Diamond |
| Multiple | Overlapping Triangle |

Overall, the communication network at School 1 appears to be well-connected with no isolates or cliques that can be identified through visual inspection. The school administrators appear to be holding central positions within this network. Suggesting that most often, teachers and other related service providers seek out advice from administrators. Also, holding a central position in this network is the school psychologist, a lead kindergarten teacher, and the reading specialist. Individuals who have been employed at the school longer, depicted by icon size, also hold central positions with the exception of the principal, one assistant principal and the school psychologist. Many actors holding periphery positions appear to be relatively new to the network. Staff in this school seem to be minimally clustered by their grade level but maintain open channels of communication to other grades/positions. The English as a Second Language (ESOL) teachers formed a cluster. The special education teachers are holding peripheral positions within the network as well. The school social worker, who expected to help with the creation of behavior intervention plans is also peripheral to the network.

Figure 2. School 2 Advice Network



| Position | Color |
|---|---|
| Teacher | Green |
| Lead Teacher | Yellow |
| Special Educator | Pink |
| Reading Specialist | Purple |
| Administrator | Red |
| Social Worker/Psychologist | Orange |
| Resource Teacher | White |
| ESOL | Maroon |
| **Grade Level** | **Shape** |
| Pre-Kindergarten | Circle |
| Kindergarten | Square |
| First | Up Triangle |
| Second | Box |
| Third | Down Triangle |
| Forth | Circle in Box |
| Fifth | Diamond |
| Multiple | Overlapping Triangle |

Similar to School 1's network, there do not appear to be any isolates. Overall, the network appears well-connected with the exception of some nodes with fewer ties. The nodes that are maintaining a peripheral position appear to be employees who have been employed at the school for fewer than two years. The principal and the lead teacher at this school maintain the most central positions meaning that individuals most often seek advice from them when they are experiencing behavioral issues. In this building both the social worker and the school psychologist maintain positions around the periphery, however, for the most part even nodes that are occupying space around the outside of the network are still connected.

**Whole Network Descriptive Characteristics**

Captured in Table 6 are the descriptive characteristics of School 1 and School 2. The metrics include network size, number of ties, density, connectedness, average distance, diameter and arc reciprocity. School 1 is larger with 39 actors and School 2 has 26 actors.

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Table 6

Descriptive Characteristics of School 1 and School 2.

| School | Size | Number of Ties | Density | Connectedness | Average Distance | Diameter | Arc Reciprocity |
|--------|------|----------------|---------|---------------|------------------|----------|-----------------|
| School 1 | 39 | 481 | .325 | .949 | 1.782 | 4 | .457 |
| School 2 | 26 | 245 | .408 | 1 | 1.595 | 3 | .596 |

**Density**

Density captures the number of existing ties in proportion to all possible ties. Given that

the network data collected in this study are directed (meaning that because A seeks out advice

from B forming a tie it does not mean that B seeks advice from A) there are more possible ties

than in an undirected graph. School 1 has a density of .325 which means that 33% of all possible

ties exist within this network. The density at School 2 is .408, where 41% of all possible ties

exist. These data could also be interpreted as there is a 33% and 41% chance that a directed

relationship exists between two randomly selected actors within the network, respectively.

**Connectedness**

Connectedness is defined as the proportion of pairs of nodes within a network that can

reach each other by a path of any length (Borgatti, Everett, Johnson, 2013). Connectedness looks

at the number of components in a graph (e.g., groups) and where the actors fall within the

different components. In a graph that is highly centralized there will be fewer components

leading to higher connectedness scores as actors will be able to easily access any other actor

within the network. The connectedness score at School 1 is equal to .949 and at School 2 is equal

to 1. The networks at both schools are highly connected and most actors are able to reach most other actors easily.

**Distance**

Average distance depicts how far or how many steps each actor is on average from any other actor within the network. The average distance at school one is 1.782 and at school 2 is 1.595.

**Diameter**

Diameter is the longest path between any two actors. In School 1, the diameter is slightly longer than at School 2. At School 1, it would take approximately four steps for the actor furthest on the periphery to access the furthest actor. At School 2, it would take three steps for the furthest two actors to reach one another.

**Arc Reciprocity**

Arc reciprocity is calculated by taking outgoing ties from each actor and determining the proportion of ties that are reciprocated. For example, if actor A reaches out for advice from actor B, in a reciprocal relationship B would also seek out advice from A. In both School 1 and School 2, the reciprocal relationships are about half with scores of .457 and .596, respectively.

## Research Question Two: What does access to behavioral expertise across both networks look like? What is the reachability of support staff?

# Network Analysis

Ego centric analysis derived from the whole network data was conducted for the actors that identified as having expertise in behavioral management through self-report and those that it can be assumed given the job expectations associated with their title. Table 7 includes Degree Centrality and Beta Centrality (Inbeta).

Table 7

Ego Centric Analysis of Individuals with Behavioral Expertise Across School 1 & 2

| School | Actor | Position | Indegree | Outdegree | Bonacich Power |
|--------|-------|----------|----------|-----------|----------------|
| 1 | 108 | Administrator | .84 | .26 | 2.11 |
| 1 | 110 | Administrator | .74 | .16 | 1.87 |
| 1 | 111 | School Psychologist/Social Worker | .74 | .16 | 1.84 |
| 1 | 129 | School Psychologist/Social Worker | .05 | .24 | .04 |
| 2 | 212 | Administrator | .88 | .5 | 1.72 |
| 2 | 218 | Administrator | 1.00 | .96 | 1.85 |
| 2 | 223 | School Psychologist/Social Worker | .67 | .17 | 1.46 |
| 2 | 227 | Lead teacher | .83 | .58 | 1.73 |
| 2 | 229 | School Psychologist/Social Worker | .88 | .29 | 1.32 |

## Centrality

Degree Centrality measures captures an actor's position within a network. The advice staff sought out from administrators and support staff (i.e., school psychologist and social worker) are represented by Freedman's Degree Centrality, specifically, Indegree. Indegree captures the percentage of actors that sought advice from the specific individual (Borgatti, Everett, & Johnson, 2013). Outdegree represents the percentage of staff that these individuals reached out to. The mean Indegree for School 1 is .325 (SD= .22) and is .408 (SD= .25) for

School 2. The mean Outdegree for School 1 is .325 (SD= .19) and .408 (SD=.24) for School 2. These values are captured in Table 7. In School 1, Indegree values show that most staff members seek out advice regarding managing challenging behaviors from these individuals with the exception of Actor 129 where only 5% of staff seek out advice from this individual.

Beta Centrality, (Inbeta reach) is a measure of potential influence that an individual actor can have on those that they are both directly and indirectly connected to. This measure takes into consideration a degree centrality and eigenvector centrality by setting a beta value and comparing the length of walks from point to point.

**Visual Analysis**

The sociograms below depict the directed communication networks of School 1 and School 2. The red nodes represent the actors with behavioral expertise. The size of the node was determined by their Bonacich Power score.

Figure 3. School 1 Sociogram with Bonacich Power.
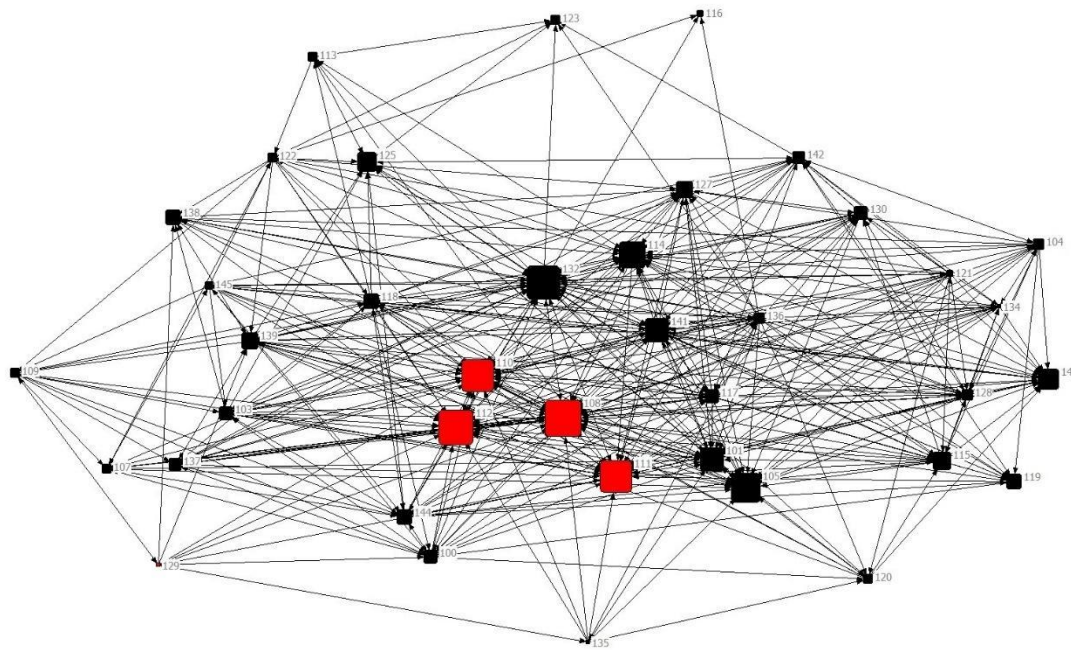


Behavioral support resources within School 1 had higher Bonacich Power scores than

most other members within the network with the exception of node 129. This suggests that

overall, the behavioral support resources have influence within the network. They are well

positioned to share intervention techniques and provide support. Other actors within the network

also had high Bonacich Power. Specifically, nodes 101, 105, 114, 132, and 141 also have

influence within the network. Node 132 is a reading specialist who works across grade levels and

has been employed by the school for more than 10 years. Nodes 101 and 105 are resource

teachers that work across multiple grade levels. Actor 1. Nodes 114 and 141 are kindergarten and

first grade teachers.

Figure 4. School 2 Sociogram with Bonacich Power.
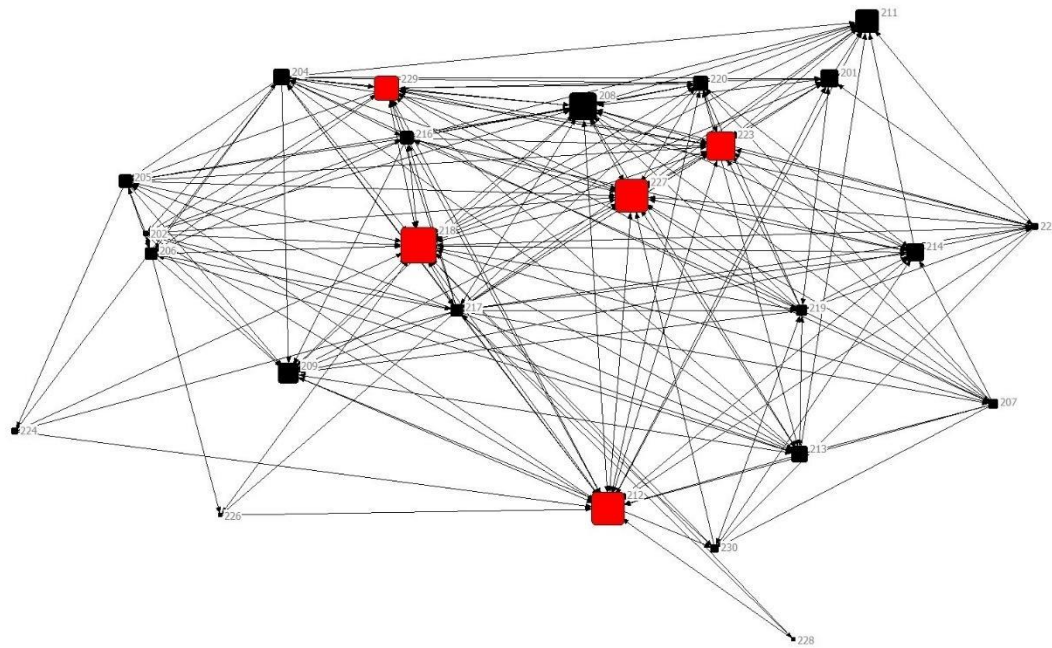


Consistent with School 1, School 2's behavior support staff mostly have high influence within the network, with the exception of node 229. Administrators and support staff are most often sought out for behavioral advice and are well positioned to provide resources. Other actors with high Bonacich Power include node 208 and 211. Both actors are teachers who have worked within this school building between 6-10 years.

## Research Question Three: To what extent do advice seeking behaviors of individuals depend on perceptions of organizational health?

### Organizational Health Inventory Elementary (OHI-E) Results

In order to capture information about the organizational properties at each of the schools, the OHI-E was completed by each participant (n= 64). The scores for the two schools can be

seen in Table 8. The numbers are reported in a standard score for the five domains: Teacher Affiliation, Collegial Leadership, Institutional Integrity, Resource Influence, Academic Emphasis, and an overall Health Index. Teacher Affiliation investigates the quality of relationships between teachers and their commitment to their work. At School 1 the mean score was $M$=641.56 (SD=115.43) compared to School 2 which was slightly higher with a $M$=682.55 (SD=13-.43). Collegial Leadership measures the extent to which each school's leadership is friendly and approachable. The collegial leadership at School 1 (M=684.65, SD=171.22) was lower than School 2 (M=805.77, SD = 107.40). Institutional Integrity is the school's ability to stay true to their mission and values despite external pressures. School 1 had a M=512.56 (SD=133.99) and School 2 had a M=552.71 (SD= 106.34). Resource Influence is this principal's ability to obtain necessary materials. Resource influence at school 1 had a mean of 553.74 (M=151.12) and school 2 had a mean of 478.22 (M= 157.84). Academic Emphasis is there are high expectations for academic performance among staff and students. This domain was the lowest between the two schools with a mean of 461.72 (SD=131.41) at School 1 and a mean of 455.97 (SD= 152.42) at School 2. All the domains are averaged together to form the overall Health Index. The Health Index at both schools were relatively high with School 1 having a mean score of 572.89 (SD=84.86) and School 2 had a mean score of 622.60 (SD= 77.64).

Table 8

Organizational Health Inventory Results by School

| Domains | | Mean | Standard Deviation |
| --- | --- | --- | --- |
| Teacher Affiliation | School 1 | 641.56 | 115.43 |
| | School 2 | 682.55 | 130.43 |
| Collegial Leadership | School 1 | 694.65 | 171.22 |
| | School 2 | 805.77 | 107.40 |
| Institutional Integrity | School 1 | 512.64 | 133.99 |
| | School 2 | 552.71 | 106.34 |
| Resource Influence | School 1 | 553.74 | 151.12 |
| | School 2 | 478.22 | 157.84 |
| Academic Emphasis | School 1 | 461.72 | 131.41 |
| | School 2 | 455.97 | 152.42 |
| Health Index | School 1 | 572.86 | 84.86 |
| | School 2 | 622.60 | 77.64 |

**Visual Analysis**

Figures 5 and 6 depict the advice seeking network at School 1 and School 2 with the nodes manipulated to depict individuals' ratings of overall Organizational Health, Health Index.

Figure 5. School 1 Sociogram of Advice Network with Health Index
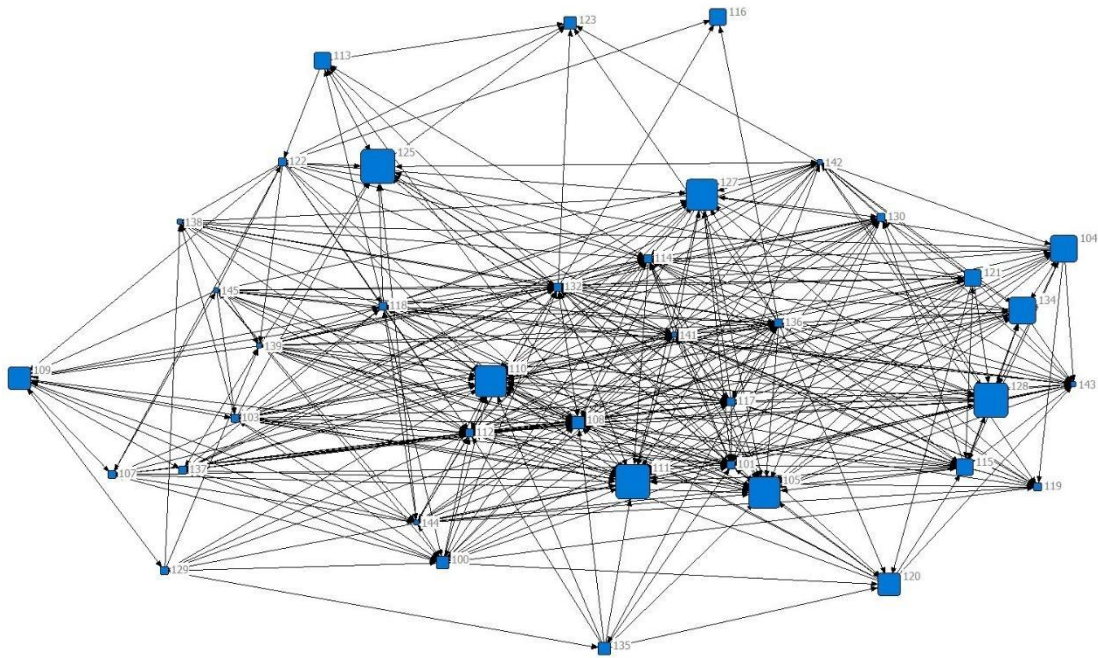


At School 1, it appears that many of the actors holding the most central positions and those on the periphery have lower perceptions of overall organizational health. Visual inspection reveals that many actors that are not central but are closely connected appear to have higher perceptions of organizational health.

Figure 6. School 2 Sociogram of Advice Network with Health Index
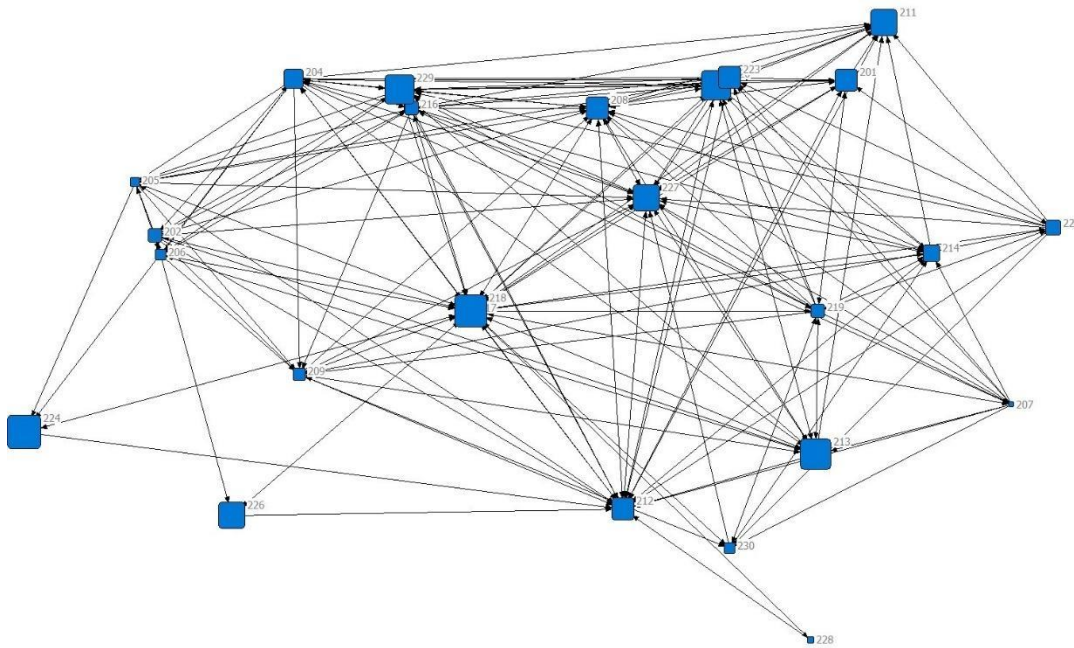


Visual inspection of School 2 revealed that the majority of actors seem to have similar

perceptions of the school's overall organizational health. Similar to School 1, peripheral nodes'

perception of organizational health appears to be less favorable.

## Canonical Correlation Analysis

A canonical correlation analysis was conducted using three of the domains that comprise

the Organizational Health Inventory as predictors of the four centrality variables to evaluate the

multivariate shared relationship between the two variable sets (i.e., organizational health and

advice seeking behavior). The analysis yielded three functions with squared canonical

correlations ($R_c^2$) of .241, .167, and .055 for each respective function. The full model was

statistically significant using the Wilks's $\lambda = .597$, $F$ (12, 151.10) = 2.707, $p<.002$. Since the

Wilks's $\lambda$ represents the variance unexplained by the model, 1- $\lambda$ yields the full model effect

size in an $r^2$. For the set of two canonical functions, the $r^2$ type effect size was .403, which indicates that the full model explained a moderate portion, about 40% of the variance shared between the variable sets.

The dimension reduction analysis allows for the testing of the hierarchical arrangement of functions for statistical significance. As previously mentioned, the full model was statistically significant (Functions 1 to 3). Function 2 to 3 was also statistically significant, $F$ (6, 116.00) = 2.455, $p<.029$. Function 3, which was tested in isolation, was not considered statistically significant in explaining the amount of shared variance between the variable sets, $F$ (2, 59.00) = 1.715, $p<.189$. The $R_c^2$ effects for the first two functions are considered modestly noteworthy in the context of the study. The $R_c^2$ effect for the first function was 24.13% of the variance and 16.69% of the variance for the second function. The last function only explained 5.50% of the variance remaining in the variable set after the extraction of the prior functions.

Presented in Table 9 are the standardized canonical function coefficients (i.e., the relationship between the two synthetic variables) and structure coefficients (i.e., the importance of the particular variable within the model) for Functions 1 and 2. The squared structural coefficients and the communalities ($h^2$) are also provided. The squared structural coefficients represent the proportion of variance the individual organizational health and advice seeking behavior variables linearly share with the synthetic variables that form them. The canonical communality coefficient ($h^2$) describes the proportion of variance in each variable that is explained by the meaningful canonical functions, Functions 1 and 2 (Sherry & Henson, 2005). Based on the squared structure coefficients, Function 1 results suggest that the most relevant criterion variable was Collegial Leadership. Collegial Leadership and Institutional Integrity appear to be inversely related. In the predictor set of Function 1 Inbeta appeared to be the

primary contributor. In Function 2, the primary contributors to the criterion set include Teacher

Affiliation and Collegial Leadership. For the predictor set, Indegree and Inbeta accounted for the

most variance in the function.

Overall, perception of organizational health is related to network centrality in that the

lower the perception of collegial leadership, the more central the actor is within the network

(Inbeta). Lower perceptions of teacher affiliation were also correlated with holding a less central

position (Indegree, Inbeta). Perception of collegial leadership is inversely related to providing

support. Staff perception of organizational health appears to be related to the number of

individuals who seek them out for support. Collegial Leadership, Teacher Affiliation, Indegree,

and Inbeta, made the greatest contribution to the model. The loadings and canonical correlations

for the canonical variates are presented in Figure 7 and Figure 8.

Table 9

Standardized Canonical Function Coefficients and Structure Coefficients for Variables

| | Function 1 | | | Function 2 | | | $h^2$% |
|---|---|---|---|---|---|---|---|
| Variable | Coef | $r_s$ | $r_s^2$ (%) | Coef | $r_s$ | $r_s^2$ (%) | |
| Teacher Affiliation | .672 | -.022 | 0.05 | -.988 | -.950 | 90.25 | 90.3 |
| Collegial Leadership | -1.217 | -.833 | 69.39 | .046 | -.523 | 27.35 | 96.74 |
| Institutional Integrity | -.009 | -.052 | 0.27 | -.311 | -.274 | 7.51 | 7.78 |
| $R_c^2$ | | | 24.13 | | | 16.69 | |
| Outdegree | -1.267 | .161 | 2.59 | -1.205 | -.405 | 16.40 | 18.99 |
| Indegree | -2.652 | .248 | 6.15 | -.912 | -.923 | 85.19 | 91.34 |
| Inbeta | 2.976 | .430 | 18.49 | .070 | -.860 | 73.96 | 92.45 |
| Outbeta | 1.565 | .372 | 13.84 | 1.05 | .256 | 6.55 | 20.39 |

Figure 7. Function 1 Loadings and Canonical Correlations for Canonical Variates
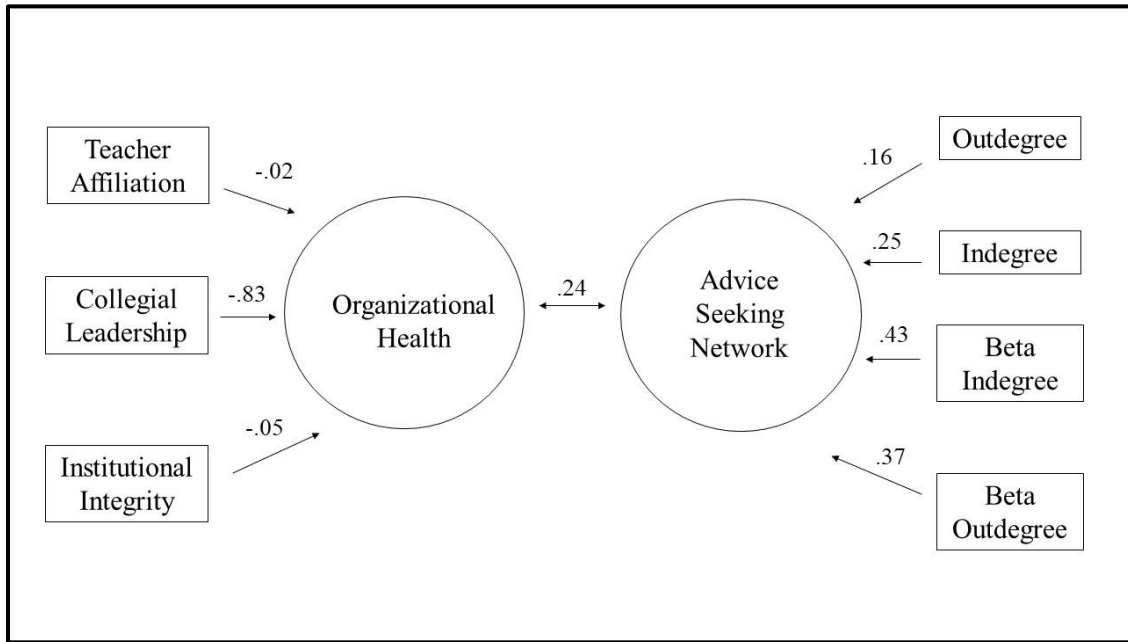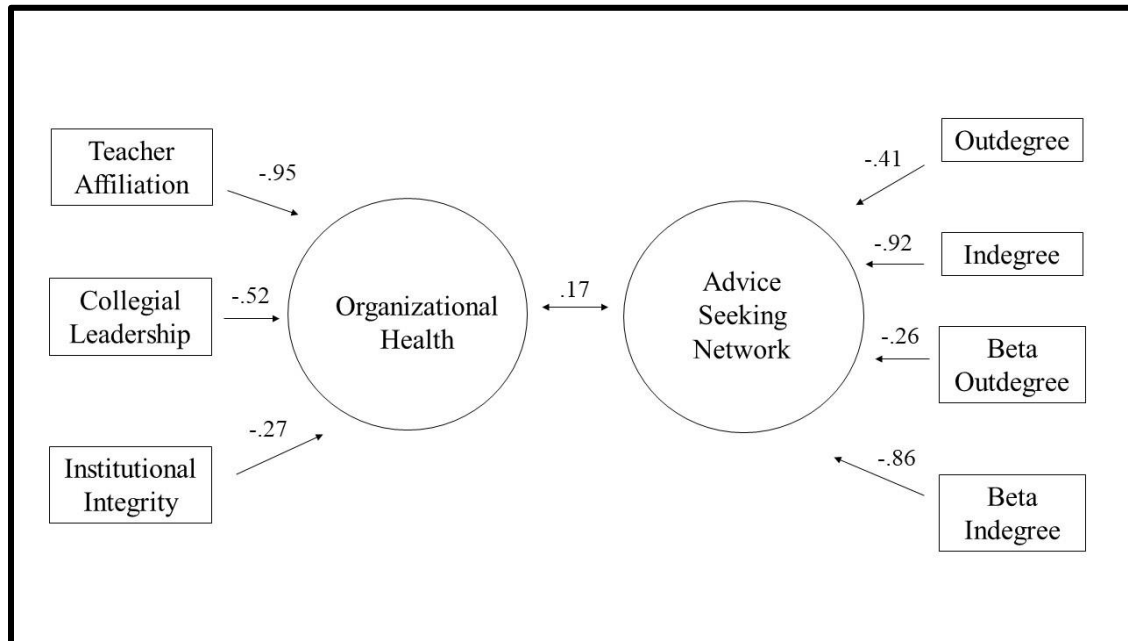


Figure 8. Function 2 Loadings and Canonical Correlations for Canonical Variates

## Chapter V

## DISCUSSION

As students' social, emotional, and behavioral needs increase many do not receive the necessary interventions (Burns, et al., 1995; Costello et al., 1996; Hoagwood & Johnson, 2003; U.S. Public Health Service, 2000). Teachers on the front lines often feel unsupported and undertrained to meet the needs of their students. This often leads to burnout and high attrition rates, especially in low income urban districts (Shernoff et al., 2011). To combat this, it is imperative that schools create a space that is marked by trust and cohesion to bolster advice seeking. Informal and formal network structures can enable the capacity for teachers to gain access to knowledge and support (Debnam et al., 2011). One of the main purposes of this study was to explore the environmental conditions, organizational health factors, that increase the likelihood that teachers will demonstrate reluctance to seek advice. These factors, particularly, staff affiliation and perception of leadership, have been associated with many school outcomes including rate of burnout, retention, job satisfaction, perceptions of problem behavior, absenteeism, and suspension rates (Johnson et al, 2012; Klassen & Chiu, 2011; McCarthy, Lambert, Beard & Dematatis, 2002; O'Brennan et al, 2014; O'Brennan et al , 2017; Pas, 2012). More information on this topic is essential as it is known that collegial support can serve as a protective factor in managing the challenges associated with teaching (Howard & Johnson, 2004), but environmental factors reduce advice seeking behavior impacting both teacher well-being and behavioral outcomes for students (Shernoff et al., 2011). If school professionals do not collaborate with one another these professionals will likely miss out on knowledge, strategies, and techniques that exist within the network. Communication networks have been studied in

educational settings using Social Network Analysis (Daly et al., 2014). Social Network Analysis allows this study to gain a deeper understanding of how network structure and individual position increase or decrease advice seeking behavior.

This study investigated the relationship between organizational health and the advice seeking networks of school staff around students exhibiting social, emotional, or behavioral concerns. In addition, this study collected preliminary data on the influence that advice seeking behavior has on the student behavioral climate (e.g. attendance, suspensions, office disciplinary referrals). If a teacher is willing to seek out advice around a challenging student, that might result in fewer office disciplinary referrals or suspensions for that particular student.

## Summary of Findings

### Research Question One: What does the advice seeking communication network of licensed school staff look like across schools?

It was hypothesized that the structural properties would vary across the two schools in terms of density and connectedness. Individuals with behavioral expertise or positional authority would hold more central positions within their networks. Further, individuals who were newer to the district, would be less connected and are more likely to be isolates. These hypotheses were partially supported. There was little variation between the two schools in terms of density. Most staff at each respective school were well connected to other staff. Similarly, both schools' advice networks were well connected. Meaning that members of both schools were able to easily access any other actor within the network which has implications for how easily information can be shared within the network. Both schools also did not appear to have cliques or many isolates suggesting staff members feel comfortable collaborating with staff members across grade levels. The limited number of members holding most peripheral positions tended to have the fewest years of experience within their current building.

Data suggest that most often school staff members were reaching out to school administrators and lead teachers for support in managing behavioral challenges. The schools varied on the positioning support staff (e.g., social worker, school psychologist).

Compared to other schools within the district, these schools appear to have low rates of teacher attrition. This finding adds to the literature that in urban schools where staff experience high levels of stress, having supportive relationships with colleagues can help mitigate the stress, improve job satisfaction, and improve performance (Mehta Atkins, & Frazier, 2013; Shernoff et al., 2011).

## **Research Question Two: What does access to behavioral expertise across both networks look like? What is the reachability of support staff?**

It was hypothesized that individuals with behavioral expertise would be highly accessible by all network members, therefore they would hold central positions. These members would have higher than average in-degrees and Inbeta reach. This hypothesis was partially supported. As previously addressed, administrators within both networks were central to the advice seeking network. Based on Indegree scores most school staff seek out the advice or support of the administrator. This is likely explained by school set protocols and procedures to respond to behavioral challenges.

The school psychologists and social workers across both buildings were commonly sought out within their respective networks, however, there appeared to be an intersectionality between position and length of employment within their school. Consistent with Indegree (number of incoming ties), administrators and support staff with greater tenure have the greatest influence over the network suggesting that they are accessible and their input and advice is

meaningful to the members within the network. However, it appears that tenure leads to more influence than training/role. This is likely related to organizational socialization where the more time an individual has had within their respective network the more familiar, they become with the values, expected behaviors, and social knowledge to be an effective participant within the organization (Chao et al., 1994). Thus, increasing the perception that one with greater tenure would be better able to support other staff members.

**Research Question Three: To what extent do advice seeking behaviors of individuals depend on perceptions of organizational health?**

It was hypothesized that a strong relationship would be found between Organizational Health (i.e., Collegial Leadership, Staff Affiliation, and Institutional Integrity) and advice seeking behavior (in-degree, out-degree, beta-in, & beta-out). Staff Affiliation would likely account for most of the variance, meaning that positive staff affiliation would be associated with high rates of advice seeking behavior. This hypothesis was partially supported. Both schools presented with high levels of Organizational Health based on the aggregated scales completed by school staff.   Obtaining a score of 500 in any of the indices suggests that the school is considered average and a score of 600 suggests that score is higher than 84% of schools (Hoy & Tarter, 1997). There was little variation between the two schools as average to above average scores were found across all domains, thus suggesting both schools were considered to be organizationally healthy based on the OHI-E, however, as hypothesized, more variation was observed at the individual level. However, inconsistent with the hypothesis, the two schools varied when it came to network position and perception of organizational health. At School 1, individuals holding central positions tended to have an overall lower perception of organizational health. This finding is inconsistent with previous research which found that administrators have a

tendency to rate organizational factors like leadership more favorably than other staff (Bevans et al., 2007). However, it is important to not over interpret this finding as the sample size is particularly small which will be further explored below.  In contrast, at School 2, central admin had higher perceptions of organizational health. This finding is more consistent with previous research. Bevans and colleagues (2007) found that principals had a tendency to rate leadership quality and staff relations as more positive than other staff members.

Across both schools being well connected is correlated with higher perceptions of organizational health. However, an individual's perception of Collegial Leadership is inversely related to an individual's Inbeta. Perception of collegial leadership is inversely related to providing support. Meaning that the more an individual is sought out the lower that individual's perception of collegial leadership. This may be due to the stress associated with frequently providing instrumental and expressive support to colleagues. On the other hand, low perceptions of Teacher Affiliation were correlated with holding a more peripheral position based on Indegree and Inbeta. Perceptions of organizational health appear to have minimal impact on individual's willingness to seek help (Outdegree), however, differences in perception were more significantly influenced by incoming ties.

## Conclusions and Implications for Practice

### Normalize Advice Seeking Behavior

Creating organizational health that embraces collaboration in a safe and supportive way may be key to enhancing advice seeking behaviors. Organizational health can be thought of as the intersection between organizational culture and climate. Organizational culture is created through institutional norms and expectations that describe the expected behavior for individuals and sets the stage for behaviors to be encouraged or discouraged (Aarons & Sawitzky, 2006;

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Tsui & Cheng, 1999). Organizational climate comprises the perceptions and importance of the polices, practices, procedures, that are created and maintained through environmental rewards (Schneider, Ehrhart & Macey, 2013). Organizational health has been associated with improved academic achievement, teacher commitment, increased graduation rates, and reduced teacher burnout (Grayson & Alvarez, 2008; Hoy & Feldman, 1987; MacNeil, Prater & Busch, 2009; Thapa, Cohen, Guffy, Higgins-D'Alessandro, 2013). Positive organizational health benefits both students and staff members. Thus, it is imperative that schools prioritize the organizational health within their communities.

Clear norms and expectations help facilitate trust among school staff and increase the likeliness of advice seeking regarding challenging student behavior (Bryk & Schneider, 2002). Organizational expectations can create norms and expectations of individuals working within the system and increase relational trust. Relational trust is an organizational property that influences the functioning of a school (Bryk & Schneider, 2002). Within schools there are expected role relationships (e.g. principal to teacher, teacher to teacher) that come with their own sets of mutual expectation and obligations. When these expectations are not met, relational trust will diminish possibly creating conflict and influencing future advice seeking behavior. Teachers' willingness to seek advice from colleagues is important to student access to services as they play an essential role in the identification and intervention process.

With schools facing an uphill battle with increasing state and federal pressure, increased student needs, and stagnate funding, schools need to create supportive systems in the most strategic way possible. A solution to this problem is PBIS. PBIS is an organizational innovation that incorporates a tiered framework by creating strategic structure to prevention efforts including screening procedures, explicit teaching and reinforcing of behavioral expectations, and

a continuum of evidence-based interventions for students unresponsive to the universal efforts. (Hawken, Vincent, & Schumann, 2008; Horner et al., 2009; Sugai & Horner, 2002). Therefore, schools that embrace a PBIS model systematically embed advice seeking behavior into their behavioral expectations for staff.  Research has linked school climate and PBIS to the likelihood of teachers' reporting problem behavior as well as improved staff affiliation. In detail, schools with positively rated school climates reported fewer negative behaviors within their classrooms (Bradshaw et al, 2008; O'Brennan et al., 2014). Organizations described by having strong ties, high levels of staff affiliation, between members have been associated with improvements in teacher learning, student outcomes, and teacher retention. In addition, strong ties influence the faster adoption of new innovations, increased ability to transfer complex information, encourages problem solving, and improves overall organizational performance (Bridwell-Mitchell and Cooc 2016; Bryk & Schneider, 2002; Coburn, Choi & Matta, 2010; Coleman, 1988; Nahapiet & Ghoshal, 1998).

Positive organizational health is essential for high functioning schools. This current study adds to this literature and has implications for schools to think through and measure their communication networks to determine overall health and to better understand where teachers are accessing essential information. When schools understand communication patterns within their buildings, it allows for more information administrators can target for improvement.

**Barriers to Staff Collaboration**

Systemic barriers to access advice should be carefully considered by school administrators. Often related service professionals are not available to grade level teams and therefore are not readily accessible to assist with the problem-solving model. Although configuring schedules to allow related service providers may not be feasible, other solutions may

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prove helpful. For example, utilizing an SST process where related service providers are active participants would enhance access. Another option would be to utilize a request for assistance form which allows teachers and other staff to initiate a problem-solving process with the appropriate related service provider. These options would likely allow for more rapid intervention which has been shown to improve behavioral outcomes for students (Hawken, Vincent, & Schumann, 2008; Horner et al., 2009; Sugai & Horner, 2002).

## Create Continuity

One of the major findings coming out of this study is the relationship between length of time employed within one school and advice seeking network centrality. Meaning that the longer a staff member has been part of the community, the more likely they are looked to as a source of instrumental support. However, a common practice within urban school districts is to shift staff, particularly related service providers, around from year to year for various staffing and personal reasons. Frequent staff changes will likely impact the extent to which staff are likely to reach out to a new colleague for support. School and districts should take this into consideration when planning for the next school year.

## Limitations

## Participants and Design

One major limitation of this study was the small sample size in relationship to the type of questions that were explored. Although individual differences were studied, all individual participants were nested within two organizations where the organizational variables were also studied. This led to questions regarding the unit of analysis where individual characteristics were studied within the context of two different organizations. In addition to the small sample size, there was little variability between the two sample schools. This is likely due to the fact that

schools were included based on their willingness to participate, likely causing volunteer bias, in that schools that were willing to participate were those that felt that their schools were functioning well. Data were collected from a third school, however, due to a low response rate network measures could not be calculated and therefore the school was not included in the study. The small sample size made it challenging to experimentally capture an important piece of this study, which was to what extent does organizational health and advice seeking impact student behavioral outcomes. Behavioral data were captured at the whole school level which did not allow for the use of statistical analysis, but rather anecdotal observation, making it hard to draw formal conclusions. Another limitation related to sample size is that when conducting canonical correlations approximately 10 cases for every variable are needed (Tabachnick & Fidell, 2007) which in this study there were 64 participants which is approximately six participants below the minimum threshold given the number of variables.

A further issue with the statistical analysis is that canonical correlations are exploratory in nature. As previously mentioned, canonical correlations do not designate an independent and dependent variable just the relationship between the variables are tested, therefore no causal findings can be found through this approach (Sherry & Henson, 2005; Tabachnick & Fidell, 2007).

When conducting canonical correlations, researchers should ensure that the variables within and between sets are not too highly correlated with one another (Tabachnick & Fidell, 2007). Given the nature of the overlap between network variables and the items within the Organizational Health Inventory, it is likely that the correlations obtained were inflated due to multicollinearity and should be interpreted cautiously (Tabachnick & Fidell, 2007). Interpreting

canonical correlations can be challenging and often lack the desired specificity that comes along with data analysis.

## Measurement

This study relied on survey methods which have their own set of limitations that are exacerbated with insufficient sample sizes. One issue that likely influenced the data was that the questionnaire that was used to obtain information about communication networks required participants to reflect on their behavior over the past three months. This requires respondents to accurately remember the timeframes, frequency, and topics in which they reached out to various staff members to obtain advice. It may have been more accurate and helpful for participants to reflect on a shorter timeframe; however, this would assume that behavioral challenges occur at a similar rate throughout the school year. Another issue that respondents might have is that they may have received helpful advice from an individual within the sixth month window but more recently found advice unhelpful, impacting the way they rated advice, this is known as the recency effect. Another variable that might impact who individuals are reaching out to are those that have built in meetings. For example, first grade teachers likely frequently collaborate on school-based issues especially if schools have regular team meetings built into their schedule. Due to the understaffing and heavy work demands of administrators and related service providers (school psychologists and social workers), these professionals are likely less accessible through regular planning meetings where more prevention and low-level intervening may be likely to occur and may be more accessible once behavioral issues rise to a greater intensity. The definition of advice seeking in regards to behavioral challenges could have been more clearly defined to better capture instrumental vs expressive support.

## Directions for Future Research

Future studies should be conducted to obtain more specific information on the organizational factors that most predict advice seeking networks. This line of research would benefit from an increased sample size to help reduce the issues brought forth by the unit of analysis. A larger sample size there reduces other analysis issues as there would be greater variability within the sample. Future research should also consider improving the advice seeking survey that was utilized in this study. Respondent accuracy and data integrity would likely be increased by asking staff who they sought advice, the type of advice (expressive vs instrumental), and the helpfulness of the advice on a weekly basis instead of asking them to reflect over a six-month period.

This study is also lacking a proper measure and analysis of student behavior data. Behavioral data should be collected at the classroom level to help directly analyze the relationship between an individual's advice seeking behavior and student outcomes. Lastly, data should be collected regarding the teaming that exists within the school and if a multi-tiered system, like PBIS is being utilized and to what extent it is being implemented.

APPENDIX A

Recruitment Script to Principal

*I am calling to let you know that your school has been invited to participate in a study that will help identify the environmental factors that influence advice seeking behaviors and the effect it has on student behavior. In detail, the purpose of this study is to investigate the relationship between organizational health and the advice seeking networks of school staff around students exhibiting social, emotional, or behavioral concerns. Further, this study aims to investigate the influence that advice seeking behavior has on student behavioral climate (e.g. attendance, suspensions, office disciplinary referrals). If you agree to participate, your staff will be asked to complete a brief online survey that will ask you to comment on who you go to in your building and who you have received helpful advice regarding concern about individual or groups of students social, emotional, or behavioral functioning. Advice consists of any conversations with the goal of strengthen routines and practices, behavioral intervention ideas, classroom management or other related reasons. Following that you will be asked to fill out information regarding the organizational health of your school (e.g. staff relationships, leadership style, resource allocation). After data is collected from staff, an interview will be set up with you in order to fill in missing gaps of data (e.g. professional's titles/ existing formal teams). In return of your school's participation you will be provided with the aggregated data from the Organizational Health Inventory which will shed light on the organizational health of your school.*

*All data will be kept confidential at the school and individual level and will not be shared with anyone. All data obtained will be coded before any analysis begins. Your participation in this study is completely voluntary and you can withdraw at any time. Your staff will be informed that they are free to skip any question that they choose when completing the survey.*

*If you have any questions or would like to discuss this further, I would like to set up a meeting with you to clarify information, share the documents that will be used for data collection, and provide you with the informed consent letter.*

*If any agree to this study and have any questions/concerns arise as your school is participating please contact the researchers, Abbey Nachman by phone at (603) 793-3178 or by email at anachman@educ.umass.edu or Dr. John Hintze by email at hintze@educ.umass.edu or by phone at (413) 545-2213. If you have any questions concerning your rights as a research subject, you may contact the University of Massachusetts Amherst Human Research Protection Office (HRPO) at (413) 545-3428 or humansubjects@ora.umass.edu.*

Appendix B

Recruitment Script for Staff Meeting

*Your school has been invited to participate in a study that will help identify the environmental factors that influence advice seeking behaviors and the effect it has on student behavior. In detail, the purpose of this study is to investigate the relationship between organizational health and the advice seeking networks of school staff around students exhibiting social, emotional, or behavioral concerns. Further, this study aims to investigate the influence that advice seeking behavior has on student behavioral climate (e.g. attendance, suspensions, office disciplinary referrals). You are all being asked to complete a brief online survey that will ask you to comment on who you go to in your building and who you have received helpful advice regarding concern about individual or groups of students social, emotional, or behavioral functioning. Advice consists of any conversations with the goal of strengthen routines and practices, behavioral intervention ideas, classroom management or other related reasons. Following that you will be asked to fill out information regarding the organizational health of your school (e.g. staff relationships, leadership style, resource allocation). To be eligible for this study you must be a licensed/certified (e.g. certified teacher, certified paraprofessional, licensed speech and language pathologist), be employed by the district on a full year contract. You are not eligible if you are a substitute temporarily filling a position.*

*All data will be kept confidential and will not be shared with anyone. All data obtained will be coded before any analysis begins. Your participation in this study is completely voluntary and you can withdraw at any time.  You are free to skip any question that you choose. Once you complete the survey your name will be entered to win one of two small gift cards. You may opt out of having your name entered.*

*Do you have any questions? If any questions/concerns arise as you are completing the survey please contact the researchers, Abbey Nachman by phone at (603) 793-3178 or by email at anachman@educ.umass.edu or Dr. John Hintze by email at hintze@educ.umass.edu  or by phone at (413) 545-2213.   If you have any questions concerning your rights as a research subject, you may contact the University of Massachusetts Amherst Human Research Protection Office (HRPO) at (413) 545-3428 or humansubjects@ora.umass.edu.*

Appendix C

Consent Form for Participation in a Research Study

*University of Massachusetts Amherst*

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**Principal Investigator:** Abbey M Nachman

**Faculty Sponsor:** Dr. John Hintze

**Study Title:** Exploring the Relationship Between School Organizational Health, Advice Seeking Networks, and Student Behavior

**IRB # 0000419**

This consent form provides you with the information needed to understand the rational for this study and why your school is invited to participate. It will also describe what participating involves and any known risks, inconveniences or discomforts that you may have while participating. I encourage you to take some time to think this over and ask questions now and at any other time. If you decide to participate, you will be asked to sign this form and you will be given a copy for your records.

Participants recruited for this study will include teachers and staff within your school building. Teachers/staff are invited to participate in order to shed light on the environmental factors that influence advice seeking behaviors and the effect it has on student behavior. In detail, the purpose of this study is to investigate the relationship between organizational health and the advice seeking networks of school staff around students exhibiting social, emotional, or behavioral concerns. Further, this study aims to investigate the influence that advice seeking behavior has on student behavioral climate (e.g. attendance, suspensions, office disciplinary referrals).

This project will include a series of surveys to be completed by the participants (e.g. school staff) including the Organizational Health Inventory and a self-report of advice seeking behavior. The time required to complete surveys will be negligible as the staff and teacher surveys should take no longer than 15 minutes to complete. Further, there will be one 30-minute interview scheduled with you as the building principal. The objective of this meeting will be to fill in missing gaps from data including titles of individuals working within the building, information about formal teams and their membership, as well as discipline data for the school.

If you agree to take part in this study, you must be willing to allow your staff to complete a survey on their own advice seeking patterns which will include reporting the individuals that they connect with when they are in need of behavioral advice. As well as be willing to participate in a 30-minute meeting with the principal investigator.

As a result of the study procedures, a risk for participation in this study may include slight discomfort from being asked to report on and having individuals report on who they see as a support source. Participants may also experience inconvenience due to the time it takes to complete the surveys. Further, you may feel slight discomfort knowing that staff will be reflecting on your leadership style within the Organizational Health Inventory.

The following procedures will be used to protect the confidentiality of study records. All information collected as part of this study will be kept strictly confidential and will be coded before any analysis

begins. The researcher will keep all study records in encrypted files within locked folders. All electronic files (e.g., database, spreadsheet, etc.) containing identifiable information will be password protected. Any computer hosting such files will also have password protection to prevent access by unauthorized users. At the conclusion of this study, the researchers may publish their findings. Information will be presented in summary format and you will not be identified in any publications or presentations. Confidentiality will be maintained unless some law has or will be broken such as reporting child abuse and neglect.

You may not directly benefit from this research; however, we hope that your participation in the study may allow for an increased understanding of how organizational factors influence advice seeking among teachers/staff and the outcomes it has on student health. For example, if teachers/staff feel trusting of each other, there may be an increased willingness to go to a colleague for advice about a student. However, if teachers feel like they do not have trust in the individuals working around them that might stifle communication, leading to less shared knowledge and expertise. Understanding the specific factors may allow for the development of effective interventions to increase shared expertise and ultimately improve student behavioral health outcomes.

We believe there are no known risks associated with this research study; however, as with any online related activity the risk of a breach of confidentiality is always possible. To the best of our ability your answers in this study will remain confidential. We will minimize any risks by keeping all information collected as part of this study strictly confidential. All data obtained will be coded before any analysis begins. The researcher will keep all study records in encrypted files within locked folders. All electronic files (e.g., database, spreadsheet, etc.) containing identifiable information will be password protected. Any computer hosting such files will also have password protection to prevent access by unauthorized users. Only the members of the research staff will have access to the passwords. At the conclusion of this study, the researchers may publish their findings. Information will be presented in summary format and you will not be identified in any publications or presentations. Confidentiality will be maintained unless some law has or will be broken such as reporting child abuse and neglect.

Your participation in this study is completely voluntary and you can withdraw at any time. You are free to skip any question that you choose. Participation or non-participation will in no way affect job standing.

If you have questions about this project or if you have a research-related problem, you may contact the researchers, Abbey Nachman by phone at (603) 793-3178 or by email at anachman@educ.umass.edu or Dr. John Hintze by email at hintze@educ.umass.edu *or by phone at (413) 545-2213.* If you have any questions concerning your rights as a research subject, you may contact the University of Massachusetts Amherst Human Research Protection Office (HRPO) at (413) 545-3428 or humansubjects@ora.umass.edu.

**I have read this form and decided that I will participate in the project described above. The general purposes and particulars of the study as well as possible hazards and inconveniences have been explained to my satisfaction. I understand that I can withdraw at any time.**

_____          _____          _____

Participant Signature                    Print Name                              Date

By signing below, I indicate that the participant has read and, to the best of my knowledge, understands the details contained in this document and has been given a copy.


_____          _____          _____

Signature of Person                    Print Name                        Date

Good Afternoon,

Thank you for taking the time to listen to the proposed study. Your participation will be greatly helpful to understand the environmental factors that influence advice seeking behaviors and the effect it has on student behavior. I want to remind you that your participation is voluntary, you may skip any questions that you feel uncomfortable answering, and you may withdrawal at any time. Please click the link below to start the survey. The first screen will explain to you the study's purpose and your rights as a participant. If you choose to participate in this study, the survey questions will follow. If you have questions about this project or if you have a research-related problem, you may contact the researchers, Abbey Nachman by phone at (603) 793-3178 or by email at anachman@educ.umass.edu or Dr. John Hintze by email at hintze@educ.umass.edu *or by phone at (413) 545-2213*.  If you have any questions concerning your rights as a research subject, you may contact the University of Massachusetts Amherst Human Research Protection Office (HRPO) at (413) 545-3428 or humansubjects@ora.umass.edu.


Online Survey Consent Form


You are being invited to participate in a research study titled *Exploring the Relationship Between School Organizational Health, Advice Seeking Networks, and Student Behavior*. This study is being done by Abbey Nachman and John Hintze from the University of Massachusetts Amherst. You were selected to participate in this study because of your role as a teacher, related service provider (school psychologist, guidance counselor, social worker, speech and language pathologist), or specialist, or administrator working within an elementary school.

The purpose of this research study is to shed light on the environmental factors that influence advice seeking behaviors and the effect it has on student behavior. In detail, the purpose of this study is to investigate the relationship between organizational health and the advice seeking networks of school staff around students exhibiting social, emotional, or behavioral concerns. Further, this study aims to investigate the influence that advice seeking behavior has on student behavioral climate (e.g. attendance, suspensions, office disciplinary referrals). If you agree to take part in this study, you will be asked to complete an online survey/questionnaire.  The questionnaire will ask you to report on your advice seeking patterns which will include reporting the individuals that you connect with when you are in need of behavioral advice. In addition, participants will be asked to complete the Organizational Health Inventory which will ask questions about staff relationships (teachers exhibit friendliness to each other) and administrative leadership (the principal discusses classroom issues with teachers).  It will take you approximately 15 minutes to complete. After completing the survey your name will be entered to win one of two small gift cards. You will have the option to opt out of having your name entered to win.

You may not directly benefit from this research; however, we hope that your participation in the study may allow for an increased understanding of how organizational factors influence advice seeking among teachers/staff and the outcomes it has on student health. For example, if

teachers/staff feel trusting of each other, there may be an increased willingness to go to a colleague for advice about a student. However, if teachers feel like they do not have trust in the individuals working around them that might stifle communication, leading to less shared knowledge and expertise. Understanding the specific factors may allow for the development of effective interventions to increase shared expertise and ultimately improve student behavioral health outcomes.

We believe there are no known risks associated with this research study; however, as with any online related activity the risk of a breach of confidentiality is always possible. To the best of our ability your answers in this study will remain confidential. We will minimize any risks by keeping all information collected as part of this study strictly confidential. All data obtained will be coded before any analysis begins. The researcher will keep all study records in encrypted files within locked folders. All electronic files (e.g., database, spreadsheet, etc.) containing identifiable information will be password protected. Any computer hosting such files will also have password protection to prevent access by unauthorized users. Only the members of the research staff will have access to the passwords. At the conclusion of this study, the researchers may publish their findings. Information will be presented in summary format and you will not be identified in any publications or presentations. Confidentiality will be maintained unless some law has or will be broken such as reporting child abuse and neglect. Another potential risk to participants is that you may feel slight discomfort from being asked to reflect on you go to for advice as well as having others report if they come to you for advice.

Your participation in this study is completely voluntary and you can withdraw at any time. You are free to skip any question that you choose. Participation or non-participation will in no way affect job standing.

If you have questions about this project or if you have a research-related problem, you may contact the researchers, Abbey Nachman by phone at (603) 793-3178 or by email at anachman@educ.umass.edu or Dr. John Hintze by email at hintze@educ.umass.edu *or by phone at (413) 545-2213.* If you have any questions concerning your rights as a research subject, you may contact the University of Massachusetts Amherst Human Research Protection Office (HRPO) at (413) 545-3428 or humansubjects@ora.umass.edu.

By clicking "I agree" below you are indicating that you are at least 18 years old, have read and understood this consent form and agree to participate in this research study. Please print a copy of this page for your records.

| I Agree | I Do Not Agree |
|---------|----------------|

# Organizational Health Inventory for Elementary Schools

## OHI-E

**Directions:** The following are statements about your school, Please indicate the extent to which each statement characterizes your school from **rarely occurs** to **very frequently occurs.**

| | Rarely Occurs | Sometimes Occurs | Often Occurs | Very Frequently Occurs |
|---|---|---|---|---|
| 1. The principal explores all sides of topics and admits that other opinions exist. | ① | ② | ③ | ④ |
| 2. The principal gets what he or she asks for from superiors. | ① | ② | ③ | ④ |
| 3. The principal discusses classroom issues with teachers. | ① | ② | ③ | ④ |
| 4. The principal accepts questions without appearing to snub or quash the teacher. | ① | ② | ③ | ④ |
| 5. Extra materials are available if requested. | ① | ② | ③ | ④ |
| 6. Students neglect to complete homework. | ① | ② | ③ | ④ |
| 7. Students are cooperative during classroom instruction. | ① | ② | ③ | ④ |
| 8. The school is vulnerable to outside pressures. | ① | ② | ③ | ④ |
| 9. The principal is able to influence the actions of his or her superiors. | ① | ② | ③ | ④ |
| 10. The principal treats all faculty members as his or her equal. | ① | ② | ③ | ④ |
| 11. The principal goes out of his or her way to show appreciation to teachers. | ① | ② | ③ | ④ |
| 12. Teachers are provided with adequate materials for their classrooms. | ① | ② | ③ | ④ |
| 13. Teachers in this school like each other. | ① | ② | ③ | ④ |
| 14. Community demands are accepted even when they are not consistent with the educational program. | ① | ② | ③ | ④ |
| 15. The principal lets faculty know what is expected of them. | ① | ② | ③ | ④ |
| 16. Teachers receive necessary classroom supplies. | ① | ② | ③ | ④ |
| 17. The principal conducts meaningful evaluations. | ① | ② | ③ | ④ |
| 18. Students respect others who get good grades. | ① | ② | ③ | ④ |
| 19. Teachers feel pressure from the community. | ① | ② | ③ | ④ |
| 20. The principal's recommendations are given serious consideration by his or her superiors. | ① | ② | ③ | ④ |
| 21. The principal maintains definite standards of performance. | ① | ② | ③ | ④ |
| 22. Supplementary materials are available for classroom use. | ① | ② | ③ | ④ |
| 23. Teachers exhibit friendliness to each other. | ① | ② | ③ | ④ |
| 24. Students seek extra work so they can get good grades. | ① | ② | ③ | ④ |
| 25. Select citizen groups are influential with the board. | ① | ② | ③ | ④ |
| 26. The principal looks out for the personal welfare of faculty members. | ① | ② | ③ | ④ |
| 27. Teachers express pride in their school. | ① | ② | ③ | ④ |
| 28. Teachers identify with the school. | ① | ② | ③ | ④ |
| 29. The school is open to the whims of the public. | ① | ② | ③ | ④ |
| 30. A few vocal parents can change school policy. | ① | ② | ③ | ④ |
| 31. Students try hard to improve on previous work. | ① | ② | ③ | ④ |
| 32. Teachers accomplish their jobs with enthusiasm. | ① | ② | ③ | ④ |
| 33. The learning environment is orderly and serious. | ① | ② | ③ | ④ |
| 34. The principal is friendly and approachable. | ① | ② | ③ | ④ |
| 35. There is a feeling of trust and confidence among the staff. | ① | ② | ③ | ④ |
| 36. Teachers show commitment to their students. | ① | ② | ③ | ④ |
| 37. Teachers are indifferent to each other. | ① | ② | ③ | ④ |

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**Licensed Professional Survey**

**Demographic Information**

Participant Code #_____
Gender _____
Race _____
Professional Title_____
Length of employment in this school _____
Grade level you teach or support_____
Subject_____
Highest degree earned_____
What concentration_____
Are you on any formal teams (please specify)?

_____

Please indicate from the roster of licensed professionals below the individuals you have contacted AND received helpful advice regarding concern about individual or groups of students social, emotional, or behavioral functioning. Advice consists of any conversations with the goal of strengthening routines and practices, behavioral intervention ideas, classroom management, or for other related reasons. For those that you have received helpful advice please indicate the frequency (1= once, 2= twice, 3= three, 4= four, 5= five or more times), mode of communication, and friendship status. If you have not sought advice from the named individual, please select N/A.

| Teacher/ Staff Name | Received advice in the last 3 months (Yes/ No) | Friendship? I am a friend of this individual (Yes/No) | Frequency (Not applicable, 1= once, 5=four or more times) | Mode Email Phone Call Informal Meeting Formal Meeting |
|---|---|---|---|---|
|  |  |  |  |  |

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