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Threat Assessment Team Activity and Outcomes in K-12 Public Schools: Integrating Methods to Better Understand School Safety

Jessica C. Smith
Virginia Commonwealth University

DISSERTATION

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Integrating Methods to Better Understand School Safety

Jessica C. Smith

B.A., North Carolina State University, 2007
M.S., Virginia Commonwealth University, 2017

Dissertation Chair:
Hayley M.D. Cleary, Ph.D.
Associate Professor
Virginia Commonwealth University

Committee Members:
Nancy Morris, Ph.D.
Associate Professor
Virginia Commonwealth University

Sarah Raskin, Ph.D.
Assistant Professor
Virginia Commonwealth University

Deborah DiazGranados, Ph.D.
Associate Professor
Virginia Commonwealth University

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Introduction

For decades, the American public has expressed concern with crime in schools and overall school safety (McEvoy, 1999; Verdugo & Schneider, 1999). In 2018, 35% of parents articulated fear for their child's safety at school, an 11% increase from 2017 (Jones, 2018). As a result, the school security industry has ballooned into an over $2.7 billion market (Woodrow Cox & Rich, 2018). In response to public outcry, schools across the nation have adopted programs and policies to address violence in schools, much of which is based upon, and exacerbated by, fear and overreaction (Madfis, 2015; Noguera, 1995). Although many academics, policymakers, and practitioners agree schools are often the safest place for children (Diliberti et al., 2019), reports from across the United States of violent incidences in schools are gaining vast media attention, and anecdotally, parents and school staff believe that school violence is on the rise (Sawchuck, 2021). Most recently, the Washington Post reported "the pandemic waned, classrooms reopened and gun violence soared at the nation's primary and secondary schools," noting there have been 14 school shootings from March – June 2021, the most over any three month period since at least 1999 (Woodrow Cox & Rich, 2021). While it is important to consider gun violence in context, it is also essential to acknowledge parent, student, and staff perspectives that any instance of violence, especially gun violence, is too much in schools.

Since the start of the 2021-2022 school year, there have been 16 shootings on school grounds, representing over 82 school shootings since 2018 (Education Week, 2021). In 2021 alone, *Education Week* reports there have been 24 shootings on school grounds leaving 6 people dead and 34 wounded (2021). Rates such as these are not new, however, and have been fairly consistent over the past 50 years. According to the Center for Homeland Defense and Security (CHDS), which tracks any incident in the United States in which a gun is brandished, fired, or a bullet hits school property, there have been 1,721 incidents with 610 fatalities and 1647 injuries from 1970 – July

2020 (CHDS, 2021). These numbers include 185 ‘active shooter’ instances, which CHDS defines as incidents when a shooter killed or wounded a victim as part of a continuous episode of violence (CHDS, 2021). Similar to the CHDS definition, the Washington Post counts any shooting incident that happens at a school, a definition which results in 284 incidents since 1999 (Woodrow Cox et al., 2021). Everytown for Gun Safety has also been tracking school shootings and report 82 instances of gunfire on school properties in 2021, killing 21 and injuring 47 (Everytown, 2021). While these numbers may seem stark, when considering that approximately 48.1 million students (NCES, 2021) attend public K-12 schools annually across the United States, school shootings and their subsequent victims make up a very small percentage of overall gun violence and violence at schools (Flannery et al., 2021). School shootings are not a new phenomenon either, as schools in the United States have witnessed at least 11 incidences annually since 1970 (CHDS, 2021). What *has* changed, however, is the spotlight placed upon instances of gun violence in schools and the ubiquitous *school shooter*. A recent study of media coverage of mass shootings and public engagement found that media coverage lasted on average 31 days, often longer than the average public engagement (10 days), based on searches for information with the events themselves (Croitoru et al., 2020). Yet, exhaustive media coverage of school shootings persists and yield considerably more coverage that other mass shootings (Schildkraut et al., 2018) often leading to support for retributive, and at times archaic public policies (O’Toole & Fondacaro, 2017).

Targeted Violence in Schools

With expanded media coverage of high-profile active shooter events, school safety and school shootings have been a growing concern for citizens, policymakers, and law enforcement officials (McCarthy; 2015; Cornell & Maeng, 2018). Of particular concern are school shootings that are premeditated, known as *targeted violence*—a relatively new phenomenon with a recent application to the school setting. *Targeted violence* was originally conceptualized in 1995 as “a term

that refers to situations in which an identifiable (or potentially identifiable) perpetrator poses (or may pose) a threat of violence to a particular individual or group" that is not a random act of violence (Fein et al., p. 1). While gun violence in general in uncommon in schools (Kolbe, 2020), instances are targeted violence are even more rare (Paez et al., 2021). Due to the infrequency of targeted violence in schools, it is often difficult to apply (and subsequently assess) traditional risk assessments or school disciplinary practices as prevention strategies (Borum et al.,1999; O'Toole, 1999). Thus, the threat assessment model emerged as a fact-based tool to assess the potential for and to intervene in instances of targeted violence.

Threat assessment is a systematic process for the evaluation of and intervention with those who pose a threat of violence and is performed by multidisciplinary teams (O'Toole, 1999; US Secret Service, 2004; Cornell & Maeng, 2018). Since the early 2000s, law enforcement agencies have recommended and utilized threat assessment teams as a tool to prevent targeted violence (Modzeleski & Randazzo, 2018). Around the same time, the use of threat assessment teams extended to the K-12 environment as a mechanism to enhance school safety. Spurred by the Sandy Hook Elementary mass shooting in 2012, state legislatures across the nation began implementing new school safety protocols. In 2013, the Virginia General Assembly passed legislation mandating threat assessment teams in each public K-12 school in the Commonwealth, making Virginia the first state to do so (Cornell et al., 2015). As of September 2019, 19 states and the federal government have considered threat assessment team legislation, many of which are modeled after the Virginia legislation (Smith & Cleary, in preparation). Per Virginia code, each threat assessment team is tasked with "the assessment of and intervention with individuals whose behavior may pose a threat to the safety of school staff or students" (VA § 22.1-79.4). Additionally, the legislation specifies the composition of threat assessment teams and mandates teams "shall include persons with expertise in

counseling, instruction, school administration, and law enforcement" (VA § 22.1-79.4). With clarification from the Virginia Attorney General, a team in Virginia can serve one or more schools within a school division (Virginia DCJS, 2017). Even with this specification, there is currently no enforcement mechanism to ensure the guidelines in the Virginia Code are followed. The crux of threat assessment is the focus on preventing targeted violence—a known attacker selecting a target prior to committing a violent incident (US Secret Service, 2004)—through an assessment performed by multi-disciplinary teams. Together, given the legislative mandate, the individuals on the threat assessment team work to evaluate and manage threats and concerning behaviors affecting the school community. Left unchecked, schools may not be implementing threat assessment according to best practices and therefore hindering the process as a whole.

Current Project

Although the use of threat assessment teams in schools is recommended as a violence prevention measure, few studies have evaluated threat assessment teams in the K-12 environment over time and no studies to date have incorporated the views of threat assessment team members. Because threat assessment is relatively new process, the literature is sparse, with minimal empirical or theoretical contributions (Mitchell & Palk, 2016), but has grown in recent years. As such, it is important to explore threat assessment teams in Virginia K-12 public schools holistically and in the broader context of overall school safety. Often, "school safety" has been conflated with or reduced to simply mean "school violence." This project, however, takes a more complete view of school safety—one that integrates physical security, school climate, and school discipline, to illuminate findings previously underexplored by studies that by simply consider school safety as a proxy for school violence. Utilizing a concurrent parallel mixed methods design and a pragmatic lens, this project explores and addresses the following research questions:

1) **How are threat assessment teams being utilized in K-12 public schools in Virginia? (Quan + Qual)**
2) **How does the use of threat assessment teams correlate with any changes in school safety outcomes over time? (Quan)**
3) **How do threat assessment team members perceive the role and efficacy of threat assessment in promoting school safety? (Qual)**
4) **How do perceptions of threat assessment and school safety align with any changes in school safety outcomes? (Quan + Qual)**

This particular method was chosen to obtain a more complete view and better understanding of threat assessment teams in K-12 public schools. Specifically, this method allows for the simultaneous exploration and strengthening of multiple sources of data in a flexible and holistic matter (Onwuegbuzie & Leech, 2007) through the merging of a quantitative strand and qualitative strand (Clark & Ivankova, 2015). This convergent design allows for substantiated findings as the merging of the concurrent strands provides for the comparison of complementary data from different sources (Clark & Ivankova, 2015).

Detailed here is an overview of the existing literature, including a brief history on the evolution of school safety research and threat assessment in schools. Stemming from this overview is a framework of methods used to best address the research questions outlined above, a robust review of the results, and a detailed discussion of the findings. Policy implications are discussed, highlighting how the results of this research may inform school, public, and criminal justice policy.

Literature Review

This project focuses on the threat assessment process in the K-12 environment in Virginia and explores the association between threat assessment and school safety. Being a relatively new process, the literature surrounding threat assessment teams is detailed, yet many gaps exist. The following review of the literature contextualizes threat assessment as it relates to broader school safety research, highlights the history of threat assessment, specifically the evolution of the process as it is applied to the K-12 environment, and summarizes the existing research on K-12 threat assessment. This review demonstrates the need for threat assessment team research focusing on the implementation and outcomes of the team.

School Safety

In order to contextualize the implementation of threat assessment teams in the K-12 environment, it is important to understand threat assessment within the broader school safety realm. Instances of mass shootings and targeted violence[1] at schools represent a shock to the national conscience (Louvar Reeves & Brock, 2017). However, these incidents are exceedingly rare (Nekvasil et al., 2015). Although schools are generally safe, in that any student's likelihood of violent victimization is very low (Mayer & Furlong, 2010), there is a lack of consensus among scholars and practitioners regarding what specifically constitutes "school safety." Most agreement on the conceptualization of school safety centers on school violence, which came to the forefront of the policy landscape in the late 1970s and early 1980s with a series of congressional reports discussing violence in schools (National Institute of Education, 1978; US Department of Education, 1984; Mayer & Furlong, 2010). The reports highlighted a rise in juvenile violent crime in schools

[1] We use the term *targeted violence* based on its original conceptualization by Fein, Vossekuil, & Hogan (1995): "a term that refers to situations in which an identifiable (or potentially identifiable) perpetrator poses (or may pose) a threat of violence to a particular individual or group" (p. 1).

and served as a prelude to the rise of violent crime in the late 1980s and early 1990s (Mayer & Furlong, 2010). Since this time, "school violence" has been equated with "school safety." Even recently, in a joint federal report by the Departments of Education, Justice, Homeland Security, and Health and Human Services (2018) for the *Commission on School Safety,* it was clear the report was not about school safety in the holistic sense, but more "guided by the need to promote state and local solutions to school violence" (p. 13). Even though schools are still demonstrably safe (Diliberti et al., 2019; Nekvasil et al., 2017), the report characterizes school violence as a persistent problem affecting students, parents, and school staff and almost exclusively focuses on methods to prevent, mitigate, and recover from instances of targeted violence (Federal Commission on School Safety, 2018).

Playing into this narrative is a populace that perceives schools as unsafe due to highly publicized media reports and rhetoric surrounding high profile instances of targeted violence in schools, even though the actual prevalence of homicides in schools is extremely low (Borum et al., 2010). School violence (and, by proxy, school safety) is often measured through official suspension rates, arrest rates, or rates of reported victimization at schools; however, there is no nationally standardized method of collecting and reporting school-based incidences of crime or victimization (Astor et al., 2010; Mayer & Furlong, 2010). Without a unifying framework, school safety research is reduced to a piecemeal fashion within disciplinary domains. What has been consistent, however, is the adoption of policy based on policymakers' and the public's perception that a serious school safety problem exists (Kingdon, 2002).

Changes in public policy have not helped to clarify or narrow down the definition of school safety either. To combat the rise in youth violence in the 1980s and 1990s, schools began instituting zero tolerance policies and other "get tough" approaches such as mandatory suspensions and

expulsions and the use of school resource officers ("APA Zero Tolerance Task Force Report," 2008; Mears et al., 2019). These strategies, however, were not grounded in evidence before implementation and now show little to no effectiveness (APA Zero Tolerance Task Force, 2008; Mears et al., 2019). Additionally, educational organizations and authorities have widely criticized zero tolerance policies and blamed them for the nationwide increase in school suspensions and expulsions (Cornell et al., 2018; Losen & Martinez, 2013). Suspension practices, such as those emanating from zero tolerance policies, have exacerbated racial and ethnic disparities in suspension rates and further question the efficacy of exclusionary practices, as they fail to improve student behavior or school climate (APA Zero Tolerance Task Force, 2008; Cornell et al., 2018). In recent decades, schools have begun repealing zero tolerance policies and looking toward safety and discipline solutions that focus on alternatives to suspension (Mears et al., 2019; Owens et al., 2015).

Trending away from zero tolerance policies, schools have opted for approaches to school safety that also benefit school climate and discipline. Threat assessment has emerged as a tool to address acts of targeted violence, while also serving as a benefit to school climate and disciplinary disparities (Cornell et al., 2018a). As evident in the threat assessment literature, the majority of findings are descriptive results of surveys or evaluations or originate from the University of Virginia (UVA), where UVA researchers pioneered threat assessment research in the state of Virginia. While beneficial, the current literature does not adequately detail the work of threat assessment teams in schools, nor does it address if or how threat assessment teams are working towards broader school safety goals. This project addresses this gap through the concurrent analysis of quantitative and qualitative threat assessment team and school safety data. To properly situate this study, it is important to first understand the origins of threat assessment teams in K-12 public schools.

The Origins of Threat Assessment

In the latter half of the 20th century, sociological, psychological, criminal justice, and policy practitioners began exploring new and different approaches to crime control and reduction. One strategic focus was the ability to prevent crime before it occurs by identifying and intervening in the life of a person before they engage in crime. By looking at characteristics of offenders and criminal behavior, certain common factors emerged that researchers and public safety professionals have labeled as 'risk factors' that may be associated with criminal offending later in life. This development sparked the creation of several risk assessments as means to evaluate, intervene, and redirect offending, while also providing needed services to the individual offender. Historically, risk assessments were developed to address certain behaviors—violent crime or substance abuse, for example—and have been expanded to assess other behavioral or criminal justice related issues (Borum et al., 1999).

Mental health professionals, human resources professionals, courts, and correctional systems have been using risk-related inventories for quite some time (Borum et al., 1999). As it concerns violence prevention, conceptually there was a shift away from models in which "dangerousness was viewed as dispositional (residing within the individual), static (not subject to change) and dichotomous (either present or not present)" to models that views dangerousness as a risk that is contextual, dynamic, and continuous (Borum et al., 1999, p. 325). Clinical assessments of dangerousness, or *risk assessments*, utilized empirical research on the prevalence of violence in particular populations, in combination with individual risk factors that were statistically correlated with the perpetration of violence by an individual (Modzeleski & Randazzo, 2018). These violent risk assessments gauged the likelihood that an individual would participate in a violent act as compared to the individual's specific population (Meloy & O'Toole, 2011). Modern threat

assessment draws from these risk assessments and pairs the practice with other law enforcement tools, such as profiling.

In contrast to a historically reactive role, law enforcement professionals too have engaged in a form of preventative assessment with *profiling*. The process of profiling is inductive and compares an individual to a composite of those who have committed a crime or criminal behavior of interest – serial killers or school shooters, for example (Modzeleski & Randazzo, 2018). This comparison is based upon historical facts, such as a history of abuse or neglect, and static characteristics, such as sex, race, or age (Reddy et al., 2001). It should be noted, however, that a threat assessment is neither a risk assessment nor a profile but does have roots in each tradition. Conceptually, threat assessment does not rely on descriptive or demographic data, nor on any composite profile of an offender as a comparator; rather threat assessment focuses on investigating an individual's behaviors that may indicate one is on a pathway to violence (Borum et al., 1999). Additionally, threat assessment does not rely on the presence of a concrete threat, or direct communication to rise to the assessment level, but instead focuses on people who *pose* a threat of violence as the threshold for assessment (Fein & Vossekuil, 1998).

Another unique component of the threat assessment process is the use of a trained, multi-disciplinary team. The threat assessment team (TAT) handles the entirety of the deductive process through a collaboration of members who are composed of varying perspectives related to the environment in which the team resides. In a school setting, the TAT is recommended to include members from the fields of administration, law enforcement, and mental health that can offer expertise and guidance from their respective teams (Modzeleski & Randazzo, 2018).[2]

[2] For an example of a current threat assessment team worksheet, see https://www.dcjs.virginia.gov/sites/dcjs.virginia.gov/files/publications/law-enforcement/fillable-threat-assessment-form-2016.pdf.

This project takes an-depth look into the work and views of TATs, on a scale which has never before been completed. The development of threat assessment offers an insight into the evolution and melding together of multiple practices in various fields, all seeking to address the prevention of violence. As such, it is important to understand the perspectives of those practicing threat assessment, especially in K-12 schools, as they present a unique environment for teams with members having varying expertise and professional motivations. Equally important is discerning how threat assessment teams began being incorporated into K-12 schools.

School-Based Threat Assessment

The highly publicized school shootings of the late 1990s brought widespread attention to the issues of school safety, school violence, and targeted violence. Specifically, the 1999 shooting at Columbine High School marked a critical turning point for the attention paid to and the exploration of school safety (Modzeleski & Randazzo, 2018). Moreover, the focus shifted to how to prevent another tragedy from happening in the future. The events at Columbine prompted many state governments to create some sort of legislation addressing school safety, many of which included the assignment of law enforcement officers in schools as school resource officers (Cornell & Maeng, 2018). At the federal level, the US Secret Service, in conjunction with the US Department of Education, studied the planning, behaviors, and patterns of those who carried out school shootings. Titled the *Safe Schools Initiative*, the project used empirical findings to create a federal model of school threat assessment (US Secret Service, 2004). The recommendations built upon existing risk assessment frameworks, yet due to the rarity of school shootings, applying traditional risk assessment models proved difficult in developing a traditional profile of those who committed acts of targeted violence in schools (Borum et al., 1999; O'Toole, 2000). Instead, the model focused on the findings that school shootings were typically planned and someone, other than the shooter, knew about the plan (Modzeleski & Randazzo, 2018). The report also highlighted a pathway of violence

exhibited by the perpetrator – which provided opportunities for intervention (U.S. Secret Service, 2004). An additional finding from the initiative was the lack of an accurate profile for a 'school shooter,' other than the presence of aberrant behaviors that peaked prior to the instance of violence (US Secret Service, 2004, Modzeleski & Randazzo, 2018).

Conducted at a similar time, the FBI's comprehensive monograph, *The School Shooter*, (O'Toole, 2000), also informs current K-12 threat assessment practices. The report proposed an ecological systems approach to threat assessment, which investigated the personality, family dynamics, and school dynamics of the perpetrator in concert with their roles within each of those layers (O'Toole, 2000). In the report, the FBI summarized several targeted violence studies and found that traditional risk factors associated with violence or anti-social behaviors were not present in targeted violence events in schools (O'Toole, 2001). Together, the two reports uncovered important findings. For example, in 81% of cases at least one person knew the shooter was planning the incident, and 93% of offenders engaged in pre-offense disturbing behavior that created concern in others (U.S. Secret Service, 2004). Both statistics reveal powerful tools in identification, prevention, and intervention of targeted violence events in schools (Meloy et al., 2012). For example, among targeted violence incidents involving adolescents, warning behaviors in the form of leakage and directly communicated threats occurred in 58% of the cases studied (Meloy et al., 2012). Additionally, all subjects attempted to persuade unwitting or knowledgeable associates with preparations of their violent act (Meloy et al., 2012).

A more recent study of 18 cases of targeted school violence from 1996-2012 by Lenhardt and colleagues (2018) confirmed previous works by the US Secret Service (2004) and the FBI (O'Toole, 2000) in that incidences of school violence were typically pre-planned with observable traits and behaviors in the perpetrators that indicated a violent predisposition. This study reaffirmed

the findings that targeted violence in schools was the result of multiple, intricate, and intertwined patterns that served as detonators, combined with long-standing problems, conflicts, disputes, and failures (Lenhardt et al., 2018).

The 2019 update to the original US Secret Service report provided additional confirmation to these findings. In *Protecting America's Schools*, the US Secret Service (2019) updated their original analysis by examining acts of targeted violence in schools from 2008-2017. In the 41 incidents, the study confirmed the following: there is no consistent profile of a student attacker, nor of the type of school being targeted; offenders had multiple motives; most had experienced psychological or behavioral symptoms prior to the attack; all experienced social stressors in their personal relationships prior to the attack with almost all experiencing a negative home life; most had a history of school disciplinary actions; all exhibited concerning behaviors which elicited concern from others; and most communicated their intent to attack to at least one other person (US Secret Service, 2019). In addition to confirming previous findings, the 2019 report reiterated previous recommendations that "rather than focusing on a set of traits or characteristics, a threat assessment process should focus on gathering relevant information about a student's behaviors, situational factors, and circumstances to assess the risk of violence or other harmful outcomes… a multidisciplinary threat assessment team, in conjunction with the appropriate policies, tools, and training, is the best practice for preventing future tragedies" (US Secret Service, 2019, p. iv). Moreover, a recent study of 67 averted school attacks found that students who plotted violent attacks displayed many of the same warning signs as those who perpetrated violent attacks, and as such, targeted violence can be preventable (United States Secret Service, 2021). The report also found that training the school community to recognize and report concerning behavior was critical to mitigation; that early intervention was imperative to desist an individual from their pathway to

violence; that students and parents played a key role in recognizing and reporting concerning behavior; that the school resource officer (SRO) was often seen as the trusted adult in schools to whom students reported concerning behavior; and that a trained and active threat assessment team was needed to identify, assess, and intervene (United States Secret Service, 2021).

The important recommendations and findings from the US Secret Service and FBI laid the groundwork for threat assessment guidelines still incorporated today (Virginia DCJS, 2017) and newer studies confirm the need for trained threat assessment personnel to evaluate concerning behavior and reported threats. Following the release of the original reports, several schools and school divisions around the country began implementing threat assessment teams in schools.

Threat Assessment Implementation in Schools

As government reports and policymakers began to look more closely at threat assessment, and as more schools adopted the practice, guidelines and threat assessment models began to be created to inform more schools on how to implement the practice in schools. Current threat assessment guidelines and model policies note that in contrast to violent risk assessments, threat assessments are more contextual, focusing on the immediate threat and the target of the threat and not a longitudinal assessment of the offender (Cornell, 2012; Meloy, Hart, & Hoffman, 2014; Mitchell & Palk, 2016). In other words, threat assessment is a behavior-based and deductive process (Fein & Vossekuil, 1998, Meloy et al., 2011) that consists of identifying the person making threat, gathering information about the person and the threat from multiple sources, evaluating the person, and developing and implementing a plan to reduce the threat (Deisinger et al., 2008, Modzeleski & Randazzo, 2018). As practiced in the K-12 environment, student threat assessment is designed to distinguish minor misbehavior from serious threats of violence (Borum, Fein, Vossekuil, & Beglund, 1999) and is a support-focused approach that succeeds by identifying and addressing the needs of the person making the threat (Modzeleski & Randazzo, 2018). Threat assessment evaluates

threats on a case-by-case basis using a systematic approach to classify threats on a continuum of seriousness (O'Toole, 1999, US Secret Service, 2004).

The threat assessment approach continues to be the recommended standard for assessing risks of target violence in schools (Nekvasil et al., 2015; Modzeleski & Randazzo, 2018; US Department of Homeland Security; 2018, US Secret Service, 2018). In addition to recommendations from several federal agencies, in 2013 the American Psychological Association named behavioral threat assessment as an effective violence prevention strategy (Nekvasil & Cornell, 2015). Yet, despite endorsements from numerous federal agencies and researchers, the adoption of threat assessment teams in the K-12 environment is minimal but growing. A recent study of school-based threat assessment requirements among states found that only one state "unambiguously and explicitly mandates threat assessment procedures and threat assessment teams," with five states implying the need for threat assessment teams, and 39 other states displaying threat assessment resources on state-run websites (Woitaszewski et al., 2018, p. 125). A review of educational budget proposals found threat assessment resources are often missing from school reform initiatives (Lenhardt et al., 2018). However, as of the 2017-2018 school year, 43.7% of all public schools reported having some version of a threat assessment team in their school (National Center for Education Statistics, 2019). It seems then, nationally, threat assessment teams are being implemented in a piecemeal fashion, on a school-to-school basis. This figure that may change in the coming years as more states move to mandate threat assessment teams in all schools (Smith & Cleary, in preparation). The first state to pass such a mandate was Virginia in 2013. As of September 2019, 19 states have considered legislation concerning threat assessment in the K-12 environment, with just 7 states codifying the legislative proposals (Smith & Cleary, in preparation). Perhaps part of the reason for the lack of acceptance or codification of the threat assessment model

in schools is the absence of research on the implementation, efficacy, or effectiveness of threat assessment.

K-12 Threat Assessment Research

Indeed, there is a dearth of research on K-12 threat assessment. Researchers from the University of Virginia have conducted the majority of research into the application of threat assessment in the K-12 environment (Cornell & Sheras, 2006; Cornell & Allen, 2010; Cornell et al., 2018; Cornell & Maeng, 2018; Cornell et al., 2015; Nekvasil & Cornell, 2015; Nekvasil, Cornell, & Huang, 2015). This trend is, in part, due to UVA researchers' stake in the threat assessment field. In 2001, a group from the University of Virginia created threat assessment guidelines and subsequently conducted a series of field tests and studies on the application of their model in the K-12 environment (Cornell & Sheras, 2006). The group referred to the model as the Comprehensive Student Threat Assessment Guidelines (CSTAG), formerly known as the Virginia School Threat Assessment Guidelines.[3] The UVA model remains the only model with published research, aside from descriptive reporting by state governments (Cornell et al., 2018), and is the only model to be recognized as an Evidence-Based Practice from the National Registry of Evidence-based Programs and Practice (Cornell, 2020).

The first research on CSTAG was a series of field tests, the first of which examined the use of the guidelines in 35 public schools in Virginia (Cornell et al., 2004). After conducting 188 student threat assessments, researchers noted that no violent threats were carried out and that the problem-solving approach resulting in a limited number of expulsions (3) and short-term suspensions (94) (Cornell et al., 2004). Using data from the original field tests, Kaplan and Cornell (2005) found that students in special education made disproportionately more threats and those

[3] The Virginia Department of Criminal Justice Services also created threat assessment guidelines, often colloquially known as the Virginia Model.

threats were more severe than their peers, but that rates of suspension between the two groups were similar, indicating that the use of threat assessment did not increase rates for special education students. A third field test examined threat assessment use in Memphis City Schools (one of the largest, more disadvantaged school districts in the US), specifically 209 cases in which students threated serious violence within or to the school (Strong & Cornell, 2008). The analysis found that all cases processed through the threat assessment team had not resulted in the threat being carried out and that almost all students were able to return to the school environment (either within their original schools or at an alternative placement) following suspension with a reduction in disciplinary referrals for the remainder of the school year (Strong & Cornell, 2008). Additionally, a recent examination confirmed that threat assessment teams using the CSTAG model were very (70%) accurate in their classification of threats, adding that more serious threats are 36 times more likely to be attempted than threats classified at a lower level (Burnette et al., 2017).

In addition to implementation research, several studies have focused on the effect of CSTAG training on attitudes about and knowledge of threat assessment (Allen et al., 2008; Cornell et al., 2011; Cornell et al., 2012; Burnette et al., 2018; Stohlman et al., 2020). All studies indicated that school personnel, regardless of role type (school administrators, counselors, and school resource officers), displayed an increase in knowledge about threat assessment and the ability to correctly classify threat assessment cases, while also showing a decrease in support for zero tolerance policies and in fear of school violence (Stohlman et al., 2020).

Researchers from the University of Virginia have also conducted six controlled studies comparing CSTAG to a control group of schools. In a retrospective controlled study, 95 schools that reported using CSTAG were compared to 131 using another model and 54 reported not using threat assessment at all. Students in the schools using CSTAG reported less instances of bullying, more

positive perceptions of school staff, and an increased willingness to report threats of violence (Cornell et al., 2009). Additionally, schools using CSTAG reported fewer long-term suspensions (Cornell et al., 2009). A subsequent controlled study of 23 schools using CSTAG and 26 schools using another model found a 50% reduction in long-term suspensions over two years, as compared to the control group, and a 79% decrease in student reports of bullying (Cornell et al., 2011). A randomized control study of 40 schools compared 20 schools that received CSTAG training with 20 with no threat assessment training and found that students in CSTAG trained schools were four times as likely to receive counseling services than the control group, and one-third less likely to receive a long-term suspension (Cornell et al., 2012). The authors did, however, report many issues with implementation fidelity of the CSTAG guidelines[4].

A successive CSTAG study compared rates of suspension between schools that used the CSTAG model and other schools and found the former group to display 15% fewer short term suspensions and 25% fewer long-term suspensions; however the study also uncovered that Black students across all schools were twice as likely as White students to be suspended from school, though schools using the CSTAG model reported lower suspension rates overall which reduced the disparity for Black students (JustChildren & Cornell, 2013). Another retrospective control study compared 166 middle schools using the CSTAG model to 47 schools using a different model and 119 schools not using threat assessment at all and found lower rates of long-term suspensions and general victimization with the CSTAG schools (Nekvasil et al., 2015). A 2019 retrospective control study confirmed prior findings and elaborated that students processed via a CSTAG threat assessment were less likely to receive exclusionary discipline as compared to students processed through another threat assessment model (Maeng et al., 2019). Similar results were found in

[4] Anecdotally, this is a common criticism of this line of research—specifically, that schools do not know which model they are using and as such the results are not as concrete as the researchers attest.

Colorado schools using their own model, specifically that in threat assessment cases, there were no discipline disparities by race, ethnicity, or disability status – unlike in regular discipline cases (Crepeau-Hobson & Leech, 2021). Most recently, a retrospective controlled study found that students process through a threat assessment experienced a lower graduation rate than their peers, but the rate was comparable to students within the control group with similar risk factors (Stohlman et al., 2021).

Ultimately, studies conducted with Virginia schools have demonstrated "substantial evidence that adoption of a threat assessment approach can change attitudes of school personnel toward school discipline, lead to different disciplinary responses toward students who made threats of violence, and have a broader positive effect on school climate and suspension rates (Cornell et al., 2018, p. 184). It should be noted that there are numerous threat assessment models being used by schools across the United States, including models created within the school itself. Unfortunately, there is no existing research on which models are being used by schools outside of Virginia.

Several qualitative assessments stressed the importance of threat assessment and underscored the practice as providing a benefit to overall school safety (Watt, 2017; Goodrum, et al., 2018; Daniels et al.,2010). Respondents in these studies highlighted the importance of building trust with students while identifying helpers in the schools (Daniels et al., 2010), providing consistent training and check-ins with threat assessment team members (Goodrum et al., 2018), and underscored the necessity of training and support for the team in general (Watt, 2017). In interviews of community college threat assessment team members, Pendleton (2017) found that team members perceived the team itself as an important safety initiative. Additionally, members reported serving

on the team to be an opportunity to help students by providing needed resources, especially to students in need of services (Pendleton, 2017).

More broadly, a recent review of the wider threat assessment literature found that research on threat assessment is relatively obscure, especially research at the K-12 level (Mitchell & Palk, 2016). As indicated previously, much, if not all, of the quantitative research originated out of the University of Virginia. In their review of threat assessment literature, Mitchell & Palk (2016) found that few publications (12%) employed empirical validation, and most did not feature content pertaining to predictive validity. Many other publications concerning threat assessment have been simple descriptive reports from state governments – almost exclusively from Virginia. Qualitative research on threat assessment is also rather sparse. In fact, most qualitative contributions have been case studies, cross-sectional, event-based assessments, or based entirely on legal depositions (Goodrum et al., 2017; Hawkins et al., 2004; Pendleton, 2017).

What exists, then, is a body of research that, while important, is lacking in several ways. All of the existing research is cross-sectional in nature and only provides a snapshot of the current landscape. Additionally, while existing K-12 threat assessment research in Virginia has uncovered important findings related to the association of threat assessment and school discipline and school climate, none have done so in a holistic manner by considering school safety as a whole. Lastly, no study to date has explored the team component of threat assessment, nor the ways in which the team functions, a factor that makes school-based threat assessment unique in many ways. As this study proposes engaging an under-researched population – threat assessment team members - it is important to provide an overview of team evaluation in the public policy literature and explain how threat assessment teams will be approached in this study.

What Makes A Team?

In the public policy arena, teams can be defined as a group of interdependent people geared toward completing a task (Denhardt et al., 2016) with specific performance goals and mutual accountability to work (Katzenbach & Smith, 1993). Additionally, teams are often self-managed, share responsibility for their actions and performance, and have been found to produce better results over an individual-based operation (Denhardt et al., 2016). In assessing team performance, it is important to consider the purpose of the team, team membership, roles within the team, and team agreement. Because of various team dynamics, performance evaluations are not often well suited to team evaluation (Denhardt et al., 2016). Katzenbach and Smith (1993) found that for teams to be considered successful, the team required members with technical and functional expertise, problem solving skills, and decision-making skills.

Expertise is often thought of either as the possession of an abstract representation of knowledge (Rorty, 1979) or as a product of patterned interactions and practices (Brown & Duguid, 2000). In the former interpretation, a team functions to bring together experts from different domains for the aggregation of skills and knowledge (Faraj & Sproull, 2000). In the latter interpretation, the interaction of team members provides the context for which expertise emerges (Faraj & Sproull, 2000). Both perspectives view the aggregation of individual expertise as an input to the coordination of the team – the process. As such, it is incumbent upon each member of the team to recognize and value other team member expertise, have an awareness of expertise, and be willing to share information, all which increase team performance (Stasser, 1992; Faraj & Sproull, 2000). In general, teams that trained together, in lieu of individual, piecemeal training, were found to perform more effectively, as the teams trained as a unit were able to respond systematically to various situations (Faraj & Sproull, 2000). In sum, for teams to be effective, members must know the various expertise levels of other members of the team, recognize when specific member

expertise is needed, and follow through on the delivery of member expertise (Faraj & Sproull, 2000). As theorized by Wegner (1998), expertise is maximized through participation in team activities and through the articulation and adoption of policy. This process can be especially difficult for teams with members from different agencies or different disciplines (Frost et al., 2005). Differences in policies, goals, practices, and verbiage can cause members to collide in the team setting "as boundaries around specialisms are broken down" (Frost et al., 2005, p. 189). This is particularly salient in multi-disciplinary teams, such as with threat assessment teams, as members come together from various fields with differing expertise.

Considering Teams in Threat Assessment

After the release of reports by the FBI and Secret Service in the early 2000s, threat assessments began to be used sporadically by police departments, federal agencies, colleges and universities, and some K-12 schools as a tool to address targeted violence in schools. In 2013, the Virginia General Assembly mandated that each public K-12 school maintain a threat assessment team. Each team is tasked with "the assessment of and intervention with individuals whose behavior may pose a threat to the safety of school staff or students" (VA § 22.1-79.4). Additionally, Virginia Code specifies the composition of threat assessment teams and mandates team membership "shall include persons with expertise in counseling, instruction, school administration, and law enforcement" (VA § 22.1-79.4). The expertise on a K-12 threat assessment team is based upon its members' individual knowledge and relies on the aggregation of that knowledge to successfully evaluate each case processed through the threat assessment team. While each member brings their own expertise, new knowledge about threat assessment is created through shared experiences, practice, a common goal, and through the explication of consolidated knowledge regarding threat assessment. Teams are tasked with working collaboratively; as such, the success of the team hinges upon team knowledge, expertise, and practice.

Per Virginia Code, threat assessment teams are mandated to include team members with expertise in different disciplines, specifically law enforcement, counseling, instruction, and school administration (§ 22.1-79.4). The multi-disciplinary nature of team composition could present conflict within teams as members from the different disciplines have varying job roles and functions. For example, law enforcement officers serve a very different role in schools (and in their day-to-day jobs) than school administration. These internal team dynamics are currently unknown as no prior literature has sought to assess the actions and perceptions of K-12 threat assessment team members. Understanding internal threat assessment team functioning and processes is important as results could inform future training and best practices or may uncover prejudicial practices or discriminatory outcomes.

Summary

As policymakers, law enforcement, and school administrators struggle to understand and find solutions to instances of targeted violence in schools, threat assessment has emerged as a tool to recognize, prevent, and intervene with those who pose a risk to school safety. While more schools are incorporating the threat assessment model and more states are mandating the use of threat assessment teams in schools (Smith & Cleary, in preparation), significant gaps in the literature remain. While there is evidence to suggest that threat assessment can alter attitudes towards school discipline, have a positive effect on school climate and suspension rates, and change disciplinary responses to those posing threats in schools (Cornel et al., 2018), few studies have employed empirical validation, and most are simply descriptive studies of threat assessment activity (Mitchell & Palk, 2016). To date, no published studies have employed a longitudinal approach to explore implementation or functionality of teams within schools over time nor have any published studies incorporated the perspectives of team members into understanding the association of threat assessment teams and school safety as a whole. Additionally, there is a complete lack of attention

paid to the actual experiences or perceptions of K-12 threat assessment team members or the functionality of the team itself. To account for these gaps in the literature, this study proposes a concurrent parallel mixed methods design to provide substantiated findings through the merging of a quantitative and qualitative strands. This strategy aims to fill the existing void in the literature through a holistic exploration of multiple sources of data (Onwuegbuzie & Leech, 2007) and allows for the comparison of complementary data (Clark & Ivankova, 2015).

Methods

Although the use of threat assessment teams in schools is recommended, and in many states mandated (Smith & Cleary, in preparation) as a violence prevention measure, few studies have evaluated threat assessment teams in the K-12 environment over time and no studies to date have incorporated the views of threat assessment team members. Being a relatively new process, the literature surrounding threat assessment is detailed, but many theoretical and empirical gaps exist. To fill this void, what follows outlines a convergent parallel mixed methods design. This method was chosen to obtain a more complete view and better understanding (Creswell, 2014) of threat assessment teams in K-12 public schools. More specifically, this method allows for the simultaneous exploration and strengthening of multiple sources of data in a flexible and holistic matter (Onwuegbuzie & Leech, 2007).

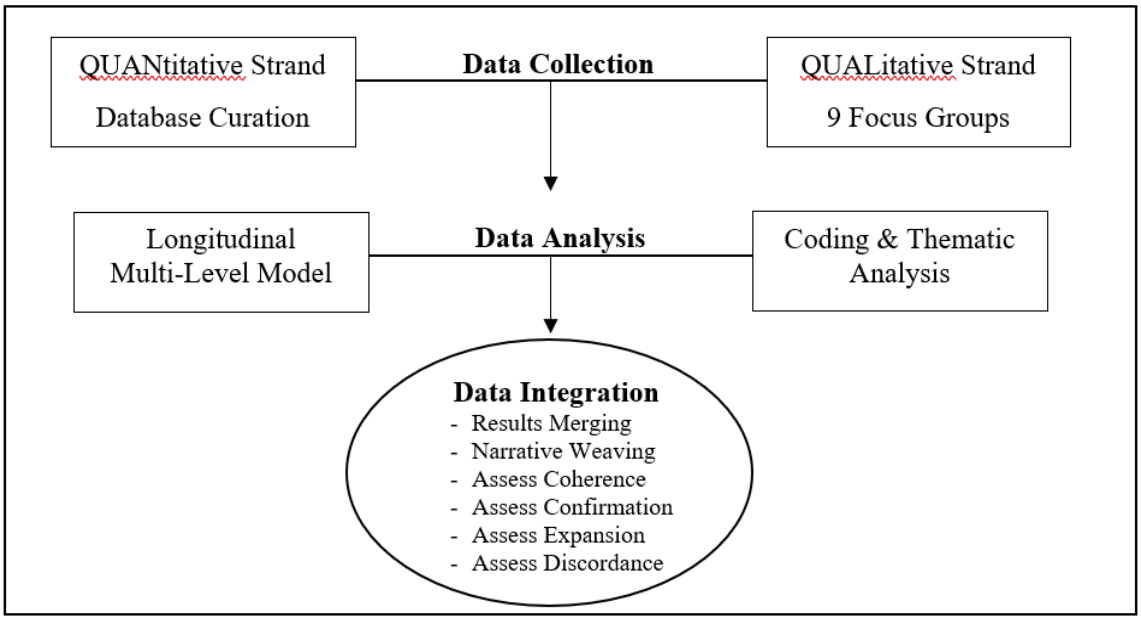
To produce corroborated conclusions, this analysis relies on the merging of a quantitative strand and qualitative strand (Clark & Ivankova, 2015). This convergent design allows for substantiated findings as the merging of the concurrent strands provides for the comparison of complementary data from different sources (Clark & Ivankova, 2015). In this design, the quantitative strand and qualitative strand were given equal standing, QUAN + QUAL (Morse, 2016). Both independent data strands were prioritized equally and interpreted together to explore convergences, divergences, and/or other relationships (Creswell, 2014). Complementary data were examined simultaneously to provide a holistic and enhanced understanding of the implementation and outcomes of threat assessment teams in K-12 schools. The triangulation of both quantitative and qualitative data provided validation to or a productive critique of findings from each data source. Figure 1[5] demonstrates the concurrent parallel mixed method design used in this study, noting the

[5] Design format suggested in Creswell, 2014.

data collection and analysis strategy for each strand as well as the integration strategies (Fetters et al., 2013).

Figure 1

Convergent Parallel Mixed Methods Design



What follows is a detailed description of both the quantitative and qualitative data strands, as well as plans for the integration of the data results. Together, this analysis merged both qualitative and quantitative data to understand the extent to which each data source enhances and confirms the findings of the other (Creswell, 2014). This study examines the following research questions:

1) **How are threat assessment teams being utilized in K-12 public schools in Virginia? (Quan + Qual)**
2) **How does the use of threat assessment teams correlate with any changes in school safety outcomes over time? (Quan)**
3) **How do threat assessment team members perceive the role and efficacy of threat assessment in promoting school safety? (Qual)**

4) **How do perceptions of threat assessment and school safety align with any changes in school safety outcomes? (Quan + Qual)**

Quantitative Strand

The quantitative strand of the convergent parallel mixed methods design relied on a triangulated database of data from secondary K-12 public schools in the Commonwealth of Virginia (n = 542), created by me for the purpose of this project. No existing data source was available to examine school safety as a whole, so I created a new database specifically for this analysis, known as the *Virginia School Safety Database* (referred to hereafter as the *Database)*. The *Database* allows for the analysis of overall school safety trends, something no prior study has accomplished. The *Database* features two separate components, one for middle schools and one for high schools, in which all data sources were match based on the type of secondary school. The units of analysis are public middle and high schools in Virginia. The *Database* comprises several existing data sources:

School Safety Audit Survey.[6] This survey is administered by and housed within the Virginia Department of Criminal Justice Services (DCJS). Every year, school principals in each of Virginia's public schools complete the survey. As part of a legislative mandate, all public schools in Virginia are required to conduct safety audits (VA § 22.1-279.8) to assess safety conditions within a school. Virginia DCJS is required to develop a list of items to be reviewed and evaluated by schools and to create a standardized reporting format (Virginia DCJS, 2018). The annual School Safety Audit Survey has been used to fulfill this legislative mandate since 2005. The data from the survey are available upon request from DCJS via a data use agreement. The current project utilized portions of the data on threat assessment teams, school resource officers, school security officers,

[6] https://www.dcjs.virginia.gov/virginia-center-school-and-campus-safety/school-safety-survey.

and other school safety measures implemented within the school. These data represent the physical security and safety measures present within schools.

Secondary School Climate Survey.[7] This annual survey of students and staff in alternating years (middle & high) is administered by and housed within DCJS. The climate survey is part of the school safety audit mandate (VA § 22.1-279.8). The data from the survey are available upon request via a data use agreement. The current project utilized an existing variable, which I used to represent the overall climate, or perceptions of safety, based on responses to a safety related question within the survey. These data represent the perception of safety within a school by students.

Discipline, Crime, & Violence (DCV) Report. This annual report of incidences of discipline, crime, and violence in a school is collected by the Virginia Department of Education. Completed by the school Principal, DCV Reports fulfill a Virginia Code (§ 22.1-279.3:1) requirement to report incidences of crime and violence in schools. These data are also used to complete federal reporting requirements under the Gun-Free Schools Act of 1994 (GFSA) and the Individuals with Disabilities Education Act (IDEA). For this project, data on exclusionary disciplinary outcomes were used to represent a measure of discipline within schools.

School Descriptive Characteristics. Variables such as enrollment and percent of students receiving disadvantaged status are collected by the Department of Education and DCJS.

The population for the *Database* was made up of schools and school divisions (geographic region controlled by a school board). Any student-level data were aggregated to develop a rate or percentage at the school level. School-level data were aggregated to develop a rate or percentage at the division level to permit between- and within-division comparison to see which level may better predicts the outcome variable (described in more detail below). No sampling strategy was employed

[7] https://www.dcjs.virginia.gov/virginia-center-school-and-campus-safety/school-safety-survey/secondary-school-climate-survey

because these data represent all secondary schools in Virginia. The *Database*, and subsequent analyses, reflects all public middle and high schools in Virginia that were open for all years of the analysis and reported data for all the aforementioned data sources. The Database represents 269 middle and 273 high schools and 115 divisions from across the Commonwealth (n = 542).

Dependent/Outcome Variables

The primary goal of the quantitative strand was to determine the association between threat assessment activity and school safety outcomes over time. School safety outcomes serve as outcome variables and were operationalized as the following:

Physical Security Measures. This outcome variable represents a count of physical security measures from the annual *School Safety Audit Survey*. Each item constituted one point and was summed; lower scores indicate fewer physical security measures, while higher scores indicate increased physical security measures. The count was sourced by 1) the number of School Resource Officers, 2) the number of School Security Officers, and 3) Emergency Access by First Responders in each school. These items were summed based on three questions from the annual school safety audit: *"How many School Resource Officers were employed at your school for the school year*?" (where values are counts from ranging from zero and higher); "*How many School Security Officers were employed at your school for the school year*?"; and "*For the school year, did area first responders have emergency access to the building during an emergency?"* (*yes* = 1, *no* = 0). Emergency access by first responders is a recognized best practice by several state and federal agencies (Department of Criminal Justice Services, 2017; Department of Homeland Security, 2019).

School Climate. This outcome variable represents a mean of student scores for each school based on student responses to the question "*I feel safe at this school*" in the *Secondary School*

Climate Survey. Students responded on a Likert scale of 1 -5 where 1 = *strongly disagree* and 5 = *strongly agree* that they feel safe at school.

Disciplinary Outcomes. The final variable represented a rate of exclusionary practices per student at the school. Exclusionary practices represented any expulsion, long-term and short-term suspension, in-school suspension, and special education interim placement. The total number of exclusionary discipline outcomes as listed in the *Discipline, Crime, & Violence Report*, per student was then summed and divided by total enrollment for the school year. A higher rate indicates a higher proportion of the total population of a school receiving an exclusionary disciplinary action. Exclusionary outcomes are indicated by the school principal on the *Discipline, Crime, & Violence Report* and enrollment numbers were taken from DCJS. Exclusionary discipline is increasingly seen as harmful to students and school climate (National Educators Association, 2018).

Due to alternating years of data collection for middle and high schools in the *Secondary School Climate Survey,* two separate analyses were performed to account for the availability of data across schools. As this is a repeated measures assessment, data were collected from four points in time for each dependent variable. The first collection period was associated with the passage of the threat assessment team mandate represent middle and high schools, respectively (2012-2013; 2013-2014); the next from 2014-2015; 2015-2016, then from school years 2016-2017; 2017-2018, and the final from 2018-2019; 2019-2020. The first sets of years represent the school years associated with middle school data, the second sets represent the school years associated with high school data.[8] These intervals were selected to allow equal distance comparisons in time (Meyers et al., 2016). As this analysis relies on an unstructured covariance structure that does not assume equal variances

[8] Alternating years were chosen to reflect the alternating nature of the school climate survey, which is distributing to middle and high schools in alternating years.

(Garson, 2019), equal distance in the time series is not required. However, by choosing equal distances in the time, it may reduce interoccasion and measurement error (Cook & Ware, 1983).

Independent Variables

Similar to the outcome variables, each predictor variable was measured at four points in time. The independent variable and multi-level covariates are as follows:

Threat Assessment Activity. This continuous independent variable representing the number of threat assessments performed each year by a school's threat assessment team. These data originate from the annual *School Safety Audit Survey* and were derived from a survey question asking a variation of "*How many threat assessments were conducted at your school in the previous school year*?" Lower values indicate that teams have performed fewer threat assessments, while higher numbers indicate that teams have performed more threat assessments.

Outcome variables as covariates. Each dependent variable also served as a covariate when they were not an outcome variable in the model (Garson, 2019). Additionally, the variables were aggregated for a division-level variable. More specifically, there is a division-level school climate score, physical security score, disciplinary outcome score, and threat assessment score which represents the division average. This inclusion allows for the assessment of influence on the outcome variable, i.e., whether the school-level or division-level score influences the outcome more than the other.

Control Variables

Disadvantage Status. As noted in the *Discipline, Crime, & Violence* reports, students in schools are given a disadvantage status if the student receives free/reduced meals, TANF, Medicaid, or experience homelessness. At the school level, the total number of students receiving a disadvantage status was divided by the total enrollment for the school year, representing a rate of

disadvantage status at each school. This variable was included to isolate the potential effect of economic disadvantage on the outcome variables.

Mental Health Professionals. (Middle Schools Only) Due to data availability in the middle school surveys, middle school analyses also include a measure of mental health professionals at each school. Mental health professionals are a crucial component of not only school threat assessment teams, but also contribute to the overall climate of a school by providing student supports. This is a count variable based on a question from the School Safety Audit, asking principals *"How many mental health professionals are employed at your school?"* This variable was included to isolate the potential effect of having mental health supports in schools on the outcome variables.

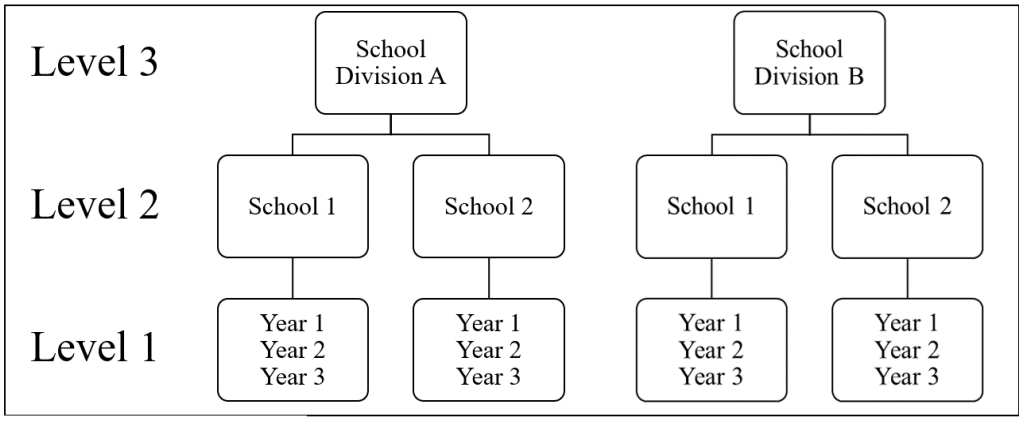
Analysis Plan

This analysis uses multilevel modeling because schools are nested within school divisions. Multilevel modeling accounts for any clustering effect at the division level, rather than assuming independence of observations, as in a traditional ordinary least squares regression (Garson, 2019). Additionally, as this is a longitudinal analysis, or multilevel growth model, repeated measures of the outcome variable will be treated as a level within the model. More specifically, Level 1 represents the repeated school safety outcome, Level 2 represents schools, and Level 3 represents school divisions. Figure 2[9] represents the three-level conceptual model.

[9] Adapted from Field, 2013.

Figure 2

Three Level Model



This model structure was used to answer the following research questions and subsequent hypotheses.

RQ1. How are threat assessment teams being utilized in K-12 schools in Virginia?

Hypothesis 1: The use of threat assessment has increased over time.

While certain schools in Virginia practiced threat assessment before the 2013 legislative mandate, the practice was new to the majority of schools. With the mandate for public schools came a mandate for DCJS to plan and develop threat assessment training for school employees and other threat assessment team members. However, many schools received threat assessment training prior to the mandate from the University of Virginia's threat assessment model (Cornell et al., 2012). Since the introduction of the mandate, both DCJS and representatives from the University of Virginia have conducted a significant amount of training around the Commonwealth (DCJS, 2020). Also, nationally, threat assessment is increasingly popular in schools and threat assessment legislation has been passed in numerous states (Smith & Cleary, in preparation). Given the increases in media attention, training, policies, and awareness efforts surrounding threat assessment, it is reasonable to expect an increase in the recognition and referral of threatening or concerning

behaviors to the threat assessment team. This descriptive research question will determine whether threat assessment team activity has increased since the codification of the threat assessment mandate.

RQ 2. What is the association between the use of threat assessment and changes in school safety outcomes over time?

Hypothesis 2: Increases in threat assessment activity are associated with increases in physical security measures within a school.

Hypothesis 3: Increases in threat assessment activity are associated with a higher percentage of students indicating they feel safe at school.

Hypothesis 4: Increases in threat assessment activity are associated with a decreased incidence rate of exclusionary discipline outcomes.

These hypotheses are based in part on existing literature, particularly the latter two (Cornell et al., 2018), and seek to confirm the findings from previous studies. Hypothesis 2 seeks to support the use of threat assessment as a practice that is complementary to the implementation of physical security measures.

For each outcome variable, I first generated descriptive statistics and then two multilevel growth models, also known as a latent trajectory model (Garson, 2019), one for middle schools and one for high schools[10]. Here, I am assuming that the repeated measure (each school safety outcome) is nested by school, which is then nested within a division. Additionally, I chose this method to obtain a complete understanding of institutional behaviors at multiple levels, specifically the contexts in which there is interaction between the levels, as this method allows for the estimation of effects of between and within school factors on outcomes (George & Thomas, 2000). Analyzing

[10] This is being done to account for data that is collected in alternating years. The outcomes for the two models will be compared to assess any differences between the two school types,

nested data using only a single-level method can create concerns of aggregation bias and imprecision, thereby necessitating the use of multi-level modeling (Bryk & Raudenbush, 1992). For example, schools within the same division may all have similar policies and practices, which could impact discipline outcomes. On the other hand, schools within a division may be more autonomous and therefore have independent discipline outcomes within the same cluster.

Multi-level modeling can account for this potential bias while also allowing for prediction in the outcome variable by taking into account variances at the school and division level (Cass, 2007). This approach was chosen because we cannot assume the repeated measures are mutually independent, nor that schools within a division are independent, as school divisions often differ on policy guidelines and practices within their divisions.

The analysis began by estimating a null model to determine if random variation was occurring at each level by identifying the Intraclass Correlation Coefficient (ICC). The ICC is measure from 0 – 1.0, detailing the proportion of total variance that is accounted for by the clustering at each level. If an ICC is above the recommended threshold of .05, it allows for the rejection of a standard OLS regression in favor of a multilevel approach (Garson, 2019), and the analysis can proceed.

Figure 3

Intraclass Correlation Coefficient Formulas

	Formula	Explanation
ICC Level 2	$ICC_2 = \frac{\tau^2_{00}}{\tau^2_{00} + \tau^3_{00} + \sigma^2_{\varepsilon}}$	Proportion of variance explained at level-2
ICC Level 3	$ICC_3 = \frac{\tau^3_{00}}{\tau^2_{00} + \tau^3_{00} + \sigma^2_{\varepsilon}}$	Proportion of variance explained at level-3

Next, each outcome variable was assessed using a multilevel longitudinal growth curve, or latent trajectory model. From the null model, the independent variable and covariates were added to

the model, with a check of AIC and BIC at each step to assess model fit (Garson, 2019). This method assessed the independent effect of the independent variable on the outcome variable, but also on each covariate. AIC and BIC were used together to evaluate the fit of each model, with model improvement evaluated as a decrease by 5 points or more (Garson, 2019). Taken together, these information criteria measures balance each other out, as the former may fail to identify the most parsimonious models while the latter may choose too small of a model (Dziak et al., 2012). Once the final model for each outcome was determined, a plot of the residuals in each model was used to confirm the normality within the residuals, thus verifying the models. Results are discussed in detail in the next section.

Figure 4

Unconditional Univariate Growth Model Formulas

	Formula – Unconditional Univariate Growth Model[1]
Level 1	$Y_{tij} = \pi_{0ij} + \pi_{1ij} time_{tij} + e_{tij}$
Level 2	$\pi_{0ij} = \beta_{00j} + r_{0ij}$ $\pi_{1ij} = \beta_{10j} + r_{1ij}$
Level 3	$\beta_{00j} = \gamma_{100} + u_{00j}$ $\beta_{10j} = \gamma_{100} + u_{10j}$
Reduced Expression	$Y_{tij} = (\gamma_{000} + \gamma_{100} time_{tij}) + (u_{00j} + r_{00j} + u_{10j} time_{tij} + r_{10j} time_{tij} + e_{tij})$
Covariance Matrix	$T_\beta = \begin{bmatrix} \tau_{\beta_{00}} & \\ \tau_{\beta_{01}} & \tau_{\beta_{11}} \end{bmatrix}$

Qualitative Strand

While the quantitative strand assessed the association between threat assessment and school safety outcomes, the qualitative strand sought to uncover the experiences and perceptions of threat assessment team members. This strand provided a deeper, richer understanding of threat assessment activity in schools by giving voice to a previously unstudied population - threat assessment team members. Ultimately, this strand uncovered insights into threat assessment and school safety while addressing the research questions:

RQ1. How are threat assessment teams being utilized in K-12 schools in Virginia?

RQ3. How do threat assessment team members perceive the role and efficacy of threat assessment in promoting school safety?

Sampling

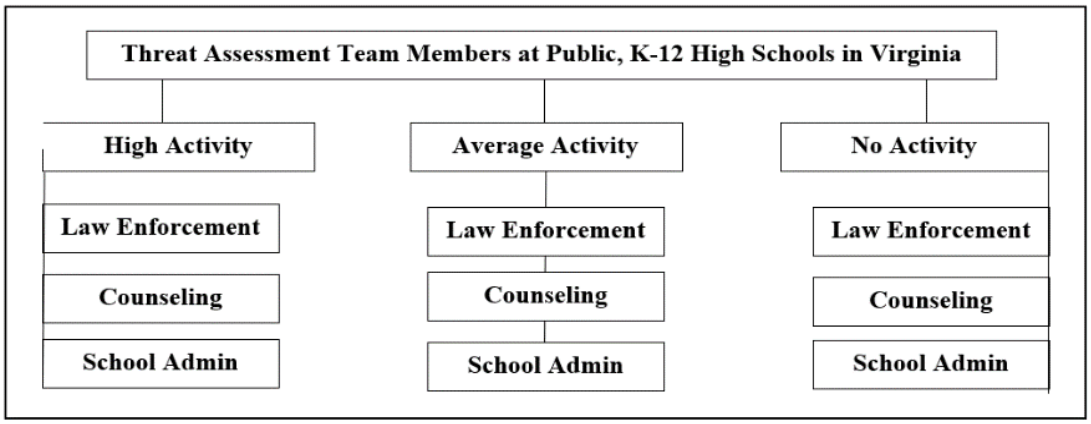
The population for the qualitative strand was threat assessment team members at public middle and high schools in Virginia. Samples of team members were stratified (Figure 5) according to threat assessment activity and professional role type. The first stratum was from the independent variable of the qualitative strand 'threat assessment activity.' Participants were randomly selected from schools whose teams were determined to have 'high activity,' 'average activity,' and 'no activity' from a frequency table. From the most recent entry into the *School Safety Index*, the 2019 *School Safety Audit Survey*[11], I extracted relevant data from the *Index* and created a new data set and removed elementary schools. I tabulated frequencies of the number of threat assessments conducted during the year. A total of 661 schools—52.19% (n = 345) middle schools and 47.81% (n = 316) high schools—were used for the final sample. Over 5,700 threat assessments were performed by middle and high schools in the 2018-2019 school year (M = 8.62, SD = 16.79, 0-150). To stratify

[11] This school year, 2018-2019, was chosen as it was the latest year unaffected by the COVID-19 pandemic. Many schools during the 2019-2020 school year were virtual for much of the school year.

the sample, the median (3) was used to control for outliers. Using quartiles, schools were divided into the three categories around the median, the middle two quartiles were collapsed to create one category and the 1st and 4th quartile were used to create two categories. The three categories were - 'no activity' being those who completed no threat assessment in the prior year (*n* = 144, approximately 25% of schools); 'average activity' being those who completed between 1 and 8 threat assessments in the prior year (*n* = 355 or 50% of schools); and 'high activity' being those who completed 9 or more threat assessments in the prior year (*n* = 159, approximately 25% of schools).[12]

Figure 5

Qualitative Sampling Strategy



At the first level of the stratified purposeful sampling, the heterogeneous groups allowed for in-depth representation among schools with differing levels of performance (Patton, 1990). Once the heterogeneous groups were identified, I created the next stratum: homogenous groups. Because threat assessment best practices advocate for the creation of teams with members from

[12] It is important to note, the threat assessment process, from an administrative perspective may be subjective. Cases must be referred to the threat assessment team. As such, there may be variation in the threshold of cases which reach threat assessment teams. Part of this stratification is to uncover the variation and subjectiveness in threat assessment case assignment.

different specialties within a school, this analysis compared those groups based on their job role within a school. The homogenous strata grouped participants by job role for the focus groups. The job roles included law enforcement, counseling[13], and school administration, each reflecting the subgroup identified in Virginia Code. By using stratified purposive sampling – stratifying by frequency of threat assessments, then by team member roles – I sought to capture maximum variation and illustrate characteristics within similarly trained subgroups while facilitating comparisons across both job roles and threat assessment activity levels where relevant. Using this stratification technique provided illuminating insights and explored variability among threat assessment teams (Emmel, 2014). Stratified purposive sampling allowed this analysis to assess common patterns from the variation in the two strata, which provided value through capturing the core and shared experiences among threat assessment team members (Patton, 1990). Ultimately, this sampling technique attempted to address my research questions through analyzing "important shared patterns that cut across cases and derive their significance from having emerged out of heterogeneity" (Patton, 1990, p. 235).

To finalize sampling, I sorted each activity stratum (No Activity, Average Activity, and High Activity) by division code (low to high) and school name (A-Z) and then assigned random numbers using the *rand* function in Excel. Values were then used to create a new list, sorted from low to high, to create a new randomized list of schools. I then identified team members to correspond to each random list. If the same division appeared in the randomized list, the subsequent school was removed to generate maximum variation. Potential participants for each stratum (9) were identified and targeted, in stages, for recruitment via email. Participants were screened by experience level, with those having fewer than two years of experience on a threat assessment team

[13] For the purposes of this analysis, the counseling role type captured anyone working in a student support role to include school counselors, school social workers, and school psychologists.

being excluded from study. Recruitment took place over the course of three weeks. Ultimately, over 1,551 emails were sent, and 53 individuals participated for a response rate of 3.5%. Across the nine focus groups, 38 divisions (out of 132) were represented from across the Commonwealth.

Data Collection

Once the strata were populated with participants, I commenced focus groups scheduling. Given the current conditions of the COVID-19 pandemic, selected participants were invited to an electronic focus group on a web-based platform (Zoom). Participants were offered compensation for their time – a $25 e-gift card which was e-mailed to participants after the focus group. As a data collection method, focus groups were chosen as a technique to allow homogenous groups to share and compare experiences through group interaction (Morgan & Hoffman, 2018), ultimately confirming and expanding upon findings from the Quantitative strand. Additionally, research has shown that focus group participants may be more willing to share sensitive information in the comfort of the group as opposed to an interview (Coenen et al., 2012; Guest et al., 2015). The use of focus groups provided insights into each subgroups' thoughts and illuminated why the members think what they think (Morgan & Hoffman, 2018). The use of homogenous groups is strategic as a method to control for potential power dynamics between inter-disciplinary members on threat assessment teams (Morgan & Hoffman, 2018). For example, members of the team from counseling backgrounds may be hesitant to disclose subjectively interpreted professional experiences or sensitive information in the presence of law enforcement or school administration, especially if their opinions contradict law enforcement, school, or division policy.

The focus groups investigated consensus and diversity among participants and allow for comparisons between each subgroup (Patton, 1990; Morgan & Hoffman, 2018). To account for observed interactions within the focus group, I used various data collection techniques. In addition

to semi-structured questions that prompted answers and discussions within the group (recorded with participants' consent via Zoom), the moderator took detailed notes on noticeable participant body language, tone of voice, gestures, and other related observations that are visible via the web-based platform. Additionally, the discussion followed a semi-structured interview guide that featured an hourglass design, funneling open-ended questions to highly targeted questions, and then back to open-ended questions (Appendix A). I chose this flow to allow participants to inform discussion as the group progressed through topics. After scheduling, groups featured anywhere from 4-8 participants. There were several no-shows on the day of the focus groups. Ultimately, focus groups ranged from 2 to 6 participants and ranged from 22 minutes to 93 minutes in duration.

Analysis Plan

A qualitative content analysis framework was used to guide the analysis of the qualitative strand. As a research method, content analysis "provides a systematic and objective means to make valid inferences from… data in order to describe and quantify specific phenomena" (Downe-Wamboldt, 1992, p. 314). The primary data for the qualitative strand was focus group transcripts and observation field notes that were subjected to a directed, manifest analytic approach, determining what the participants "actually say… using the words themselves, and describes the visible and obvious in the text" (Bengtsson, 2016, p. 10). More specifically, this content analysis focused on countable, descriptive findings. .

Focus group videos and transcriptions were downloaded from VCU Zoom and transferred to be stored on the secure VCU drive, per VCU sensitive data policies. Originals were deleted from VCU Zoom storage. Transcripts were de-identified and cleaned to prepare for coding. Each transcript was printed and reviewed in a three-step process: an initial read, a secondary read where codes were applied, and a final read for broad thematic or stand-out notes. After each session, initial

debrief notes were recorded by the moderator and provided supplemental details to the transcription. The notes were added to each group transcription to provide elaboration and context if needed. The constructed coding frame was created prior to (with a priori codes) and supplemented (with posterior codes) during analysis. This iterative process allowed for a deeper assessment of the legislation by updating the original coding criteria when significant patterns emerged. During the secondary read, posterior codes (described below) were identified if needed. Coding notes were then compiled and grouped based on role type and threat activity level, and subsequently analyzed.

As threat assessment is a relatively new application to the school environment, especially considering the multi-disciplinary nature of the teams that perform threat assessments, it was beneficial to apply both a top-down, deductive process, as well as a bottom-up, inductive process, which is common in a directed content analysis (Hsieh & Shannon, 2005). Mirroring a method described by Swain (2018), this analysis applied a set of *a priori* codes, derived from the threat assessment literature, and then applied a series of *posterior* codes, derived from the data. Another reason for the hybrid approach is the scarcity of research, especially qualitative research, as it concerns threat assessment. The newness of the application of threat assessment to school safety offers a unique opportunity to inform codes through established practice. As such, the hybrid approach offers the ability for the researcher and codes to be flexible, but also systematic – with a demarcated trail of evidence to denote the credibility of the process (Swain, 2018).

For the deductive portion, a constructed codebook was developed with codes generating from the threat assessment literature. For example, from threat assessment literature, *a priori* codes may include items such as threat protocol, discipline outcomes, team dynamics, etc. *Posteriori* codes were primarily informed by the data – focus group transcripts, but also my own experience as a practitioner. The final codebook, detailing the final a prior and posterior codes appears in Table 1.

A priori and posterior codes were used as supplements to one another and are considered in tandem for final interpretation.

Table 1

Final Focus Group Coding Scheme

Section	Category	A Priori Codes	Posterior Codes
Definitional	Defining School Safety	*Physical Security* *School Climate* *Other*	*Combination*
	Defining Threats to School Safety	*External Threats* *Internal Threats* *Other*	*External-to-internal*
	Defining Threat Assessment	*Team* *Identification* *Evaluation/Investigation* *Classification* *Action Plan* *Follow-Up* *Threat*	
Threat Assessment Operations	Team Formation		
	Team Training		*Ideal* *Consistent* *Needs Improvement* *None*
	Perceptions of the Threat Assessment Process	*Positive* *Negative* *Other*	*Mixed*
The Threat Assessment Team	Team Dynamics	*Positive* *Negative* *Other*	*Mixed*
	Power Differentials		
	Recommendations for Change		*Resources* *Training* *Process* *Follow-up*
Threat Assessment Efficacy		*Positive* *Negative* *Other*	*Mixed*

The coding process was completed through memoing – keeping notes on patterns and connections as the sample is read (Benaquisto, 2008). Responses were coded and code counts were tracked. A priori codes were verified, and new posterior codes were identified through saturation and checking. Specifically, responses were tracked to identify all potential patterns and the most salient were used to develop posterior coding, along with my expertise as a former practitioner in the field. Final codes were then checked with my dissertation advisor. Additionally, significant quotations were extracted from the transitions, particularly ones that were illustrative of a code or demonstrative descriptive prowess of a certain topic. Quotations that stood outside of the norm or were particularly striking to me were also selected for inclusion in the results section. Quotations are integrated into the results to demonstrate, explain, and add weight to certain codes.

Data Integration

Upon the completion of the analysis in the quantitative and qualitative strands, the two data strands were merged for comparison and analysis. The data was integrated using methods recommended by Fetters, Curry, & Creswell (2013) - specifically *integration through narrative* and a *fit of integration* analysis. These two strategies assist in merging the strands to address the following research questions:

RQ1. How are threat assessment teams being utilized in K-12 schools in Virginia?

RQ4. How do perceptions of threat assessment and school safety align with any changes in school safety outcomes?

Using the *integration through narrative* method, the two data strands were merged using a weaving approach. In this approach, both the quantitative and qualitative findings are written together on a theme-by-theme basis (Fetters et al., 2013). The themes include threat assessment team activity, school safety outcomes, and threat assessment teams and school safety. For ease of understanding, the data are presented in a joint display to showcase topical findings from the two

strands (Creswell, 2014). This method served as a mechanism to check validity and legitimation of the findings from each strand based on the themes, ultimately providing a holistic and synthesized corroboration of evidence from the two data strands (Plano Clark & Creswell, 2015).

In addition to *integration through narrative*, the merging of data strands also includes a *fit of integration*, or coherence, analysis. Here, results from the two strands were compared for the following fits:

- *Confirmation* - findings from the two strands confirm one another, which produces similar conclusions and enhanced credibility.
- *Expansion* - findings from the two strands diverge from one another and expand insights through addressing the differing and complementary aspects.
- *Discordance* - findings from the two strands are inconsistent, contradictory, or in complete disagreement. (Fetters et al., 2013).

Findings from the coherence, or *fit of integration*, analysis were then contextualized to the overarching research questions, assessing the growth in threat assessment activity and the relationship between threat assessment and school safety. To reconcile any contradictory findings, I sought insight from committee members as a means to bolster validity and check for reliability.

This analysis used a convergent parallel mixed methods design to obtain a more complete view and better understanding (Creswell, 2014) of threat assessment teams in K-12 public schools. To produce corroborated conclusions, this analysis relied on the merging of a quantitative strand and qualitative strand (Clark & Ivankova, 2015). In the next section, results from both strands are presented and discussed in the final section.

Results

As this analysis utilized a convergent, parallel mixed method design, results are presented by strand. What follows is a detailed accounting of both the quantitative and qualitative results, following by a presentation of the results integration. Together, this analysis merged both qualitative and quantitative data to understand the extent to which each data source enhances and confirms the findings of the other (Creswell, 2014). Results represented in this section answer the following research questions:

1) **How are threat assessment teams being utilized in K-12 public schools in Virginia? (Quan + Qual)**
2) **How does the use of threat assessment teams correlate with any changes in school safety outcomes over time? (Quan)**
3) **How do threat assessment team members perceive the role and efficacy of threat assessment in promoting school safety? (Qual)**
4) **How do perceptions of threat assessment and school safety align with any changes in school safety outcomes? (Quan + Qual)**

Quantitative Strand

To account for the variations in data availability across middle and high schools, results are presented separately for middle and high schools. More specifically, the results across the two secondary school levels include a summary of descriptive statistics and an explanation of each multilevel model used to address each research question. A summary table (Table 2) is presented below; findings are discussed in more detail in each respective section.

Table 2

Summary of Research Hypotheses and Findings

RQ1. How are threat assessment teams being utilized in K-12 schools in Virginia?

Hypothesis 1: The use of threat assessment has increased over time.

Middle Schools	Supported
High Schools	Supported

RQ 2. What is the association between the use of threat assessment and changes in school safety outcomes over time?

Hypothesis 2: Increases in threat assessment activity will be associated with increases in physical security measures within a school.

Middle Schools	Supported
High Schools	Supported

Hypothesis 3: Increases in threat assessment activity will be associated with a higher percentage of students indicating they feel safe at school.

Middle Schools	Not Supported
High Schools	Not Supported

Hypothesis 4: Increases in threat assessment activity will be associated with a decreased incidence rate of exclusionary discipline outcomes.

Middle Schools	Not Supported
High Schools	Not Supported

Middle School Analysis

Upon merging and matching data across all three data sources to create the *Database*, data for middle schools were cleaned. Specifically, schools were checked to ensure data was consistent and present across all time periods and that data entries were consistent in format and measures.

Any school with data not present for all years was removed from the analysis[14]. What follows is a summary of descriptive statistics for middle schools and a model summary by research question.

Descriptive Statistics

For the final analysis, there were 97 school divisions with an average of 11 schools nested within each division (ranging from 4 - 80), for a total of 269 schools. Schools had an average enrollment of 799 students, a slightly skewed figure with a great deal of variation (*median* = 765, *SD* = 344.59) ranging from 124 – 1,806 students per school. On average, in middle schools, 44% of students were labeled as disadvantaged (*SD* = 21%), ranging from 1.5% of students being identified as disadvantaged to 100%, or the entire school receiving the designation. A full list of descriptive statistics across years is available in Table 3.

Table 3

Middle School Descriptive Statistics

Variable	N	Median	M	SD	Range
Division	97				
School	269				
Enrollment		765	798.69	344.59	124-1806
Student Disadvantage		.46	.44	.21	.015-1.00
School Level					
Threat Assessments					
2013		2	4.10	6.59	0-55
2015		2	5.11	6.59	0-78
2017		4	8.69	13.59	0-78
2019		6	14.16	13.59	0-77
Physical Security Measures					
2013		1	1.17	.96	0-6
2015		2	1.91	.91	0-4
2017		1	1.31	.800	0-3
2019		1	1.75	1.23	0-7
Total Disciplinary Actions					

[14] Several schools in the data set were new or shut down/merged with other schools during the span of the 8-year data collection period. It is also possible that some schools refused to provide data to the Department of Education.

2013	82	105.80	82.84	1-476
2015	70	90.50	77.99	1-478
2017	50	75.69	70.51	0-361
2019	63	84.11	72.45	0-418
Rate of Disciplinary Actions				
2013	.12	.15	.11	.004-.756
2015	.10	.13	.11	.002-.828
2017	.08	.10	.09	0-.58
2019	.09	.11	.098	0-.701
Mental Health Personnel				
2013	1	2.03	2.25	0-8
2015	2	2.16	2.20	0-9
2017	4	4.27	2.66	0-13
2019	4	4.63	6.95	0-11
School Climate				
2013	4	3.9	.52	1.69-4.95
2015	4.16	4.04	.53	1.33-5.0
2017	4.11	3.99	.55	1.92-4.88
2019	4	3.9	.55	1.56-4.85
Division Level				
Threat Assessments				
2013	3.75	7.07	18.10	0-141
2015	3.45	5.11	6.23	0-26.75
2017	5	8.69	9.99	0-55
2019	9	14.33	18.316	0-134
Physical Security Measures				
2013	1	1.17	.54	0-4
2015	2	1.91	.55	0-4
2017	1.36	1.31	.50	0-3
2019	1.5	1.75	.94	0-6
Rate of Disciplinary Actions				
2013	.14	.15	.10	.004-.749
2015	.10	.13	.10	.002-.778
2017	.09	.11	.09	0-.648
2019	.09	.11	.08	0-.416
Mental Health Personnel				
2013	2	2.04	1.36	0-8
2015	2.27	2.17	1.33	0-7
2017	4	4.68	2.92	0-15
2019	4	4.63	3.08	0-22.5
School Climate				
2013	4	3.9	.39	2.5-4.67
2015	4.1	4.05	.35	2.91-5

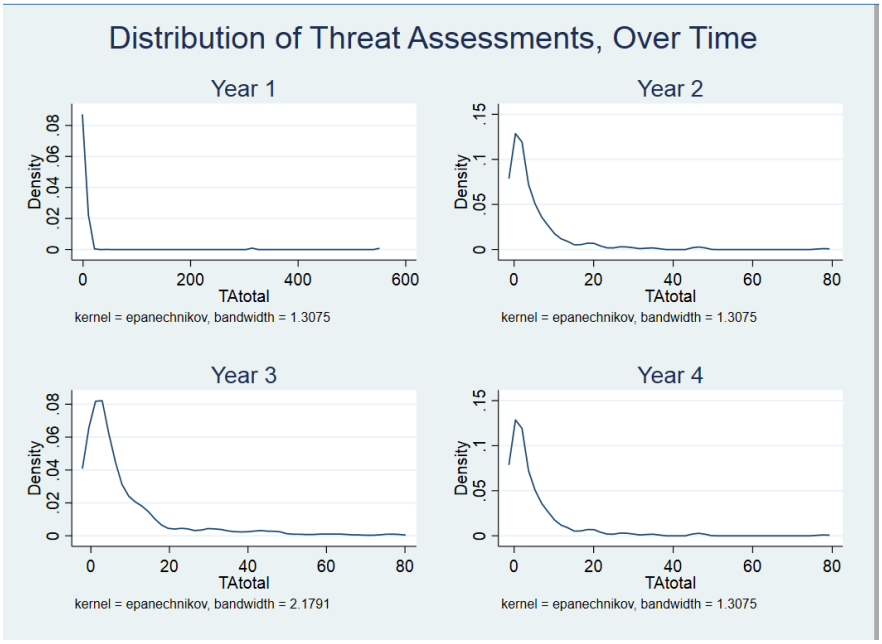
2017	4.1	4.0	.35	2-4.73
2019	4.0	3.91	.38	2-4.85

Research Question 1: Threat Assessment in K-12 Public Schools. Research question 1 explored the use of threat assessment teams in K-12 schools in Virginia. Given the threat assessment mandate, increased trainings, and overall support and attention paid to threat assessment as a mechanism to enhance school safety, I expected the number of threat assessments to increase over time. Table 3 supports Hypothesis 1 and shows that threat assessments have increased over the study period. For example, in 2013, the first year of observations, we see that on average schools conducted 4.1 threat assessments per year (*median* = 2; *SD* = 6.59) with a large range of 0 - 55. By 2019, middle schools on average were conducting 14.16 threat assessments per year (*median* = 6; *SD* = 13.59) with an even larger range of 0-77. Similar patterns occurred at the division level; in 2013. divisions reported an average of 7 threat assessments across middle schools (*median* = 3.75, *SD* = 18.1) with a range of 0 - 141 per division. By 2019 school divisions reported an average of 14.33 threat assessments per year (*median* = 9; *SD* = 18.32) with a range of 0 - 134.

To explore the connection and to examine threat assessment activity over time, I ran a multi-level model to assess the association between time and threat assessment activity. As time is a repeated measure, and middle schools are nested within their division, I first investigated the clustering effect to determine if using a multilevel model was appropriate, by analyzing the Intraclass Correlation (ICC). This model maintained an ICC of .102 at the division level, and .103 at the school-within-division level. In other words, 10.2% of the variation in threat assessment activity occurred at the division level, while 10.3% of the variation occurred within the division, between schools. Ultimately, the ICC demonstrates that 80% of the variation is within schools at the repeated

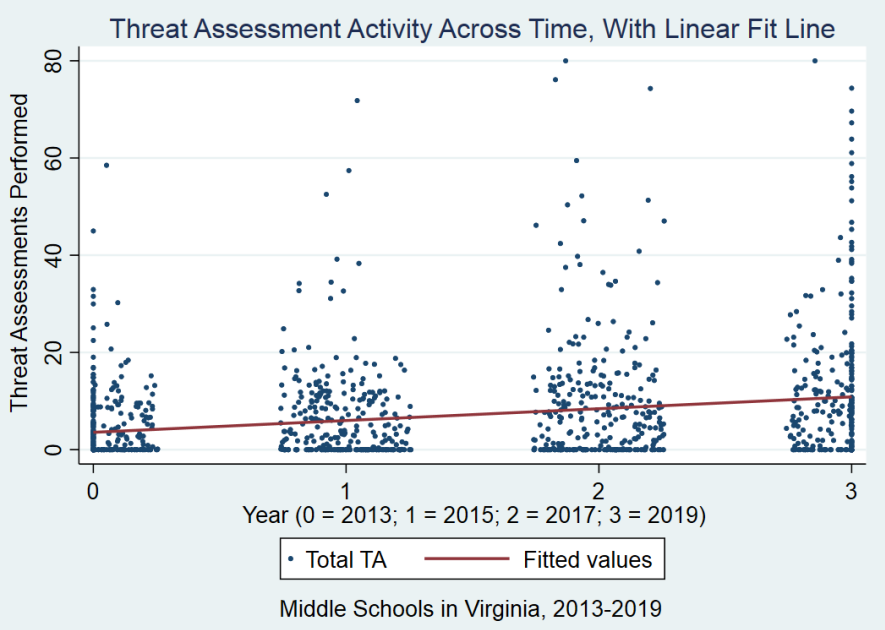
year level. At each level, the ICC exceeded the threshold of .05, or 5% (Garson, 2019), which enabled me to reject the use of a standard OLS approach in favor of a multilevel approach.

Figure 6



Due to the heavy skew of threat assessments across each year (see Figure 6), I employed a Poisson model using incident rate ratios (IRR) for enhanced interpretability (Meyers et al., 2016). The model takes into account the 1,076 observations across four years of data and 269 schools nested within 97 divisions. The model is statistically significant, Wald chi-square = 965.17 ($df = 1$; $p < .001$). Starting with the year 2013, or the model constant, there is an average of 2.37 threat assessments per year for schools with a significant increase of 1.35 threat assessments per year, supporting Hypothesis 1. A visual representation of the linear growth can be seen in Figure 7.

Figure 7



Research Question 2: Hypothesis 2 - Physical Security Measures. Research question 2 explores the association between threat assessment and various school safety outcomes over time. The first outcome I examined was a measure of methods to enhance physical security in schools: specifically, the presence of school security and school resource officers and access to the school by first responders. *Physical security measures* are represented by a count of these three items by school. In middle schools across the Commonwealth, this was a fairly consistent measure throughout the years. *Physical security measures* peaked in 2015 with an average of 1.91 measures (*SD* = .91; *Range* = 0 - 4). Reports were similar in 2019 with an average of 1.75 measures but larger variation (*SD* = 1.23; *Range* = 0-7). Results were almost identical when averaged at the division level (See Table 3).

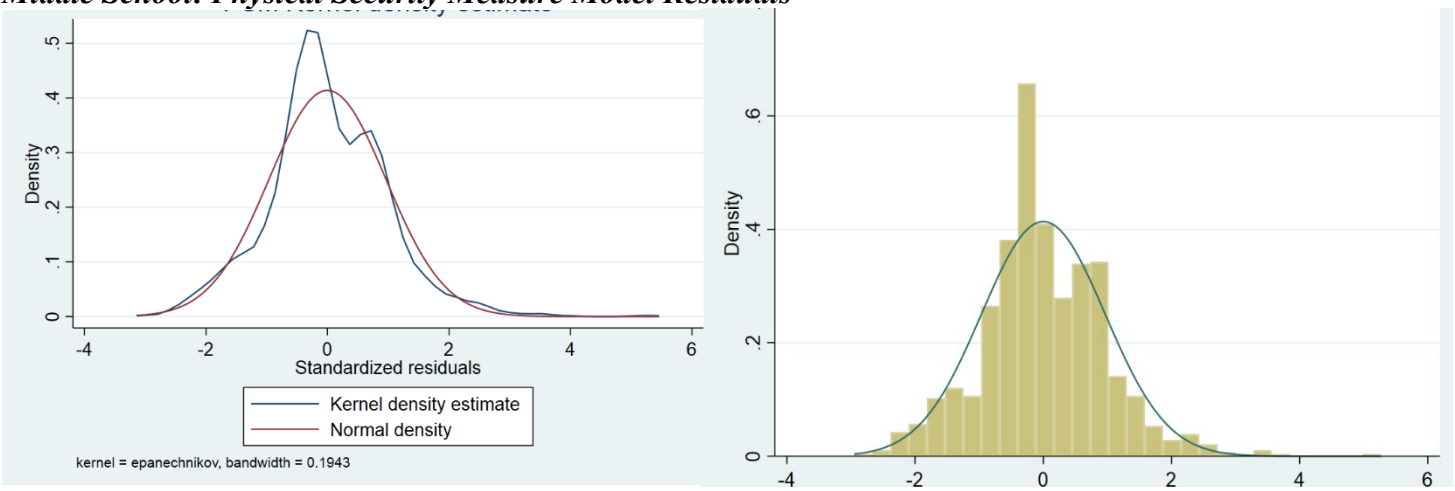
Hypothesis 2 proposed an association between threat assessment activity and *physical security measures* across time. To explore this connection, I ran a multi-level model. I first confirmed the clustering effect to determine if using a multilevel model was appropriate, by analyzing the Intraclass Correlation (ICC). The model displayed an ICC of .119 at the division level

and .187 at the school-within-division level. In other words, 12% of the variation in threat assessment activity occurred at the division level, while 19% of the variation lies within the division but between schools. Ultimately, the ICC demonstrates that 69% of the variation is within schools at the repeated year level. At each level, the ICC exceeded the threshold of .05, or 5% (Garson, 2019), which enabled me to reject the use of a standard OLS approach in favor of a multilevel approach.

The null model takes into account the 1,073 observations across four years of data and 269 schools nested within 97 divisions. The model is statistically significant, Wald chi-square = 21.78 (df =1; p <.001). Starting with the year 2013, or the model constant, there is an average of 1.25 physical security measures in schools with a significant increase of .116 measures per year. To evaluate model fit, AIC and BIC were examined together. For this null model, the AIC was 2997.47 and the BIC was 3022.36. I then added variables in by steps, checking the AIC and BIC for model fit at each stage. The final model included measures for disadvantaged students, enrollment size, threat assessment activity, discipline outcomes, school climate, and mental health professionals. Prior to confirming the final model, I added in random slopes at each level – independently and jointly, which allows the slopes at each level to vary randomly but in accordance with the associated level. Neither attempt, however, improved the model. The final model was the best improvement as compared to the null, with AIC and BIC scores of 2767.61 and 2821.59, respectively. A visual check of residuals (See Figure 8) confirms the normality of residuals which indicate the model does support the findings.

Figure 8

Middle School: Physical Security Measure Model Residuals



As seen in Table 4, several factors are significant. Holding other variables constant, we can expect to see increases in *physical security measures* by year, by enrollment, with each additional mental health personnel, with each additional threat assessment, and with increases in the rate of exclusionary discipline (all significant at $p < .001$). *Physical security measures* can be expected to increase by a factor of .08 each year – a small but significant increase on a baseline of 1.25 measures in 2013. Additionally, *physical security measures* are also expected to increase by .012 with every additional threat assessment performed by a school, offering modest support of Hypothesis 2. The largest association with *physical security measures* came by way of rates of student discipline, as each increase in measures was associated with a 1.58 increase in exclusionary discipline rates. This could be explained by the correlation between the presence of school resource officers (which was one of the *physical security measures*) and higher rates of exclusionary discipline (Lawson et al., 2019).

Research Question 2: Hypothesis 3 – School Climate. The second outcome I examined as a part Research Question 2 assessed was *school climate* - a measure of students' reported feelings on their safety at their respective schools. S*chool climate* is computed as an average of student

responses to a survey question by school. In middle schools across the Commonwealth, *school climate* was almost identical throughout the years, with a consistent rating of 4 (on a scale of 1-5), with a standard deviation of .5. Results were similarly distributed across years when averaged at the division level (See Table 3).

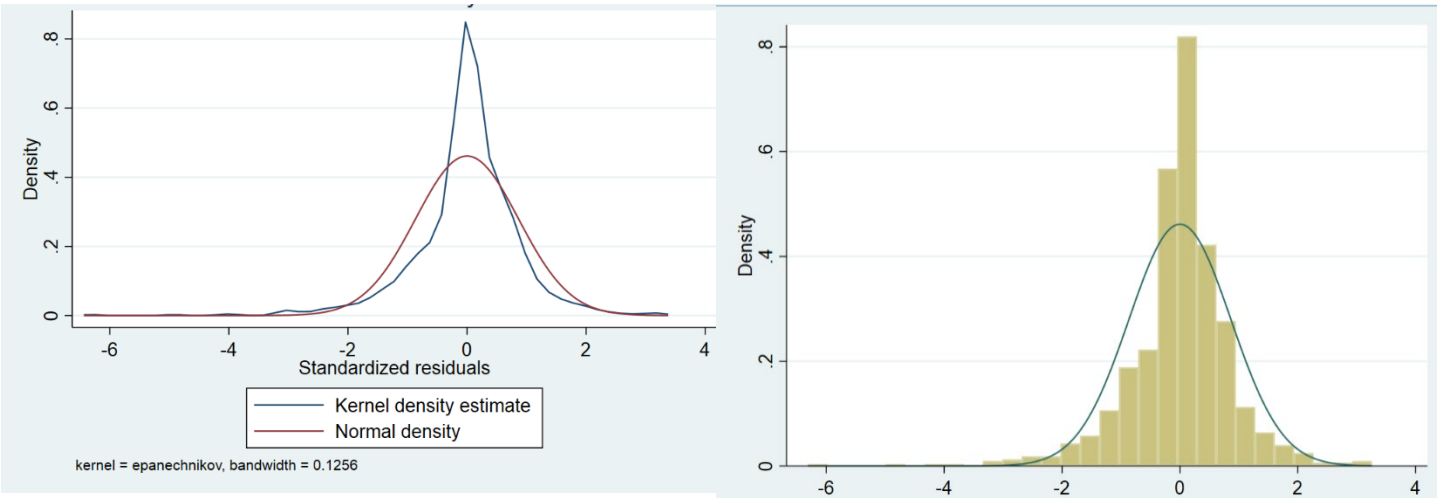
Hypothesis 3 proposed an association between threat assessment activity and school climate across time. Additionally, I sought to replicate findings of an association between school climate and threat assessment reported by Cornell and colleagues (2017). To explore this connection, I ran a multi-level model. I first confirmed the clustering effect to determine if using a multilevel model was appropriate, by analyzing the Intraclass Correlation (ICC). The model maintained an ICC of .18 at the Division level and a .51 at the school-within-division level. In other words, 18% of the variation occurs at the division level, while 51% of the variation lies within the division but between schools – a very large amount of the variation. At each level, the ICC exceeded the threshold of .05, or 5% (Garson, 2019), which enabled me to reject the use of a standard OLS approach in favor of a multilevel approach.

The null model takes into account 1,001 observations across four years of data and 269 schools nested within 97 divisions. The model is not statistically significant across time, Wald chi-square = .79 ($df = 1$; $p = .373$), which is not surprising as the distribution of climate scores across the years is almost identical. To evaluate model fit, AIC and BIC were examined together. For this null model, the AIC was 1287.79 and the BIC was 1312.33. I added variables in by steps, checking the AIC and BIC for model fit at each stage. The final model included measures for disadvantaged students, enrollment size, threat assessment activity, discipline outcomes and division level variables measuring climate, discipline outcomes, and threat assessment. Prior to confirming the final model, I added in random slopes at each level – independently and jointly, which allows the

slopes at each level to vary randomly but in accordance with the associated level. The model was improved by including a random slope at the school level. The final model represented the best fit in relation to improvement to the null with AIC and BIC scores of 610.11 and 673.90, respectively, representing a major improvement to the model. A visual check of residuals (See Figure 9) confirms the normality of residuals which indicate the model does support the findings.

Figure 9

Middle School: School Climate Model Residuals



As seen in Table 4, several factors are significant. Holding other variables constant, *school climate* ratings increase as three variables decrease: rates of student disadvantage (-.31), enrollment size (-.0001), and school discipline (-1.81). Additionally, increases in school climate were associated with increases in climate at the division level (.95) and increases in exclusionary discipline (1.56) at the division level (all significant at $p < .01$). Threat assessment activity did not significantly relate to *school climate*, so Hypothesis 3 was not supported. Reductions in the rate of exclusionary discipline at the school level confirms prior research (Cornell et al., 2017).

Research Question 2: Hypothesis 4 - School Discipline. The final school safety outcome I examined was *school discipline*, more specifically exclusionary discipline – a measure of the rate of

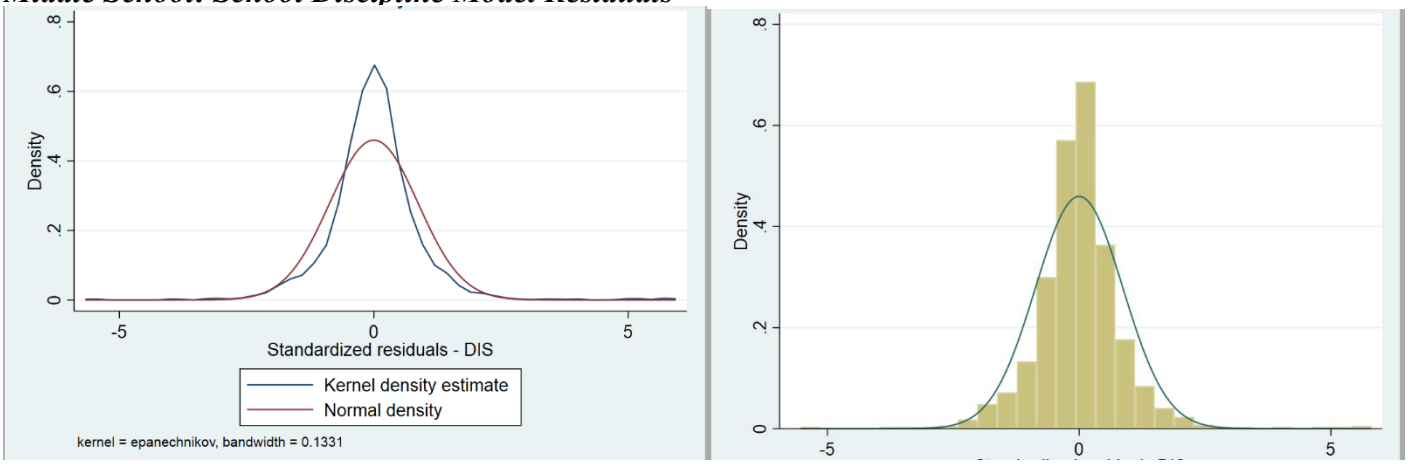
exclusionary discipline instances at a school per student per year. In middle schools across the Commonwealth, exclusionary discipline practices remained low, on average, and appeared to be declining slightly. In 2013, the average rate for exclusionary discipline was .15 (*median* = .12; *SD* = .11) with what appears to be several high outliers as the rate ranged from .004-.756, even with a relatively modest standard deviation. By 2017, the average rate for exclusionary discipline had dropped to .10 (*median* = .08; *SD* = .09) with a range of 0-.58. There was a slight uptick by 2019 with an average of .11 (*median* = .09; *SD* = .098) and a range of 0-.701. It is unknown whether the schools reporting zero instances of exclusionary discipline were implementing a policy to end the practice, were experiencing a problem with reporting, or actually engaged in zero exclusionary discipline practices that year. Results were similarly distributed across years when averaged at the division level (See Table 3).

Hypothesis 4 proposed a negative association between threat assessment activity and school discipline across time, particularly that increases in number of threat assessments performed by a school would be associated with decreases exclusionary discipline. Additionally, I sought to replicate findings of an association between school discipline and threat assessment as reported by Cornell and colleagues (2018). To explore this connection, I again ran a multi-level model. I first confirmed the clustering effect to determine if using a multilevel model was appropriate, by analyzing the Intraclass Correlation (ICC). The model displayed an ICC of .42 at the Division level and .84 at the school-within-division level. In other words, 42% of the variation occurs at the division level, while 84% of the variation lies within the division but between schools – a very large amount of the variation. At each level, the ICC exceeded the threshold of .05, or 5% (Garson, 2019), which enabled me to reject the use of a standard OLS approach in favor of a multilevel approach.

The null model takes into account the 1,070 observations across four years of data and 269 schools nested within 97 divisions. The model is statistically significant across time, Wald chi-square = .115.92 (*df* =1; *p* <.001). Starting with the year 2013, or the model constant, there is an average disciplinary rate of .15 in schools with a significant decrease of -.012 to the rate per year. To evaluate model fit, AIC and BIC were examined together. For this null model, the AIC was -2985.96 and the BIC was -2961.08. It is important to note here that AIC and BIC are not absolute values, as such the smallest number still represents the best model fit (Garson, 2019). I added variables in by steps, checking the AIC and BIC for model fit at each stage. The final model included measures for disadvantaged students, enrollment size, mental health professionals, threat assessment activity, physical security measures, climate, and division level variable for discipline. Prior to confirming the final model, I added in random slopes at each level – independently and jointly, which allows the slopes at each level to vary randomly but in accordance with the associated level. Neither attempt, however, improved the model. The final model was improved with AIC and BIC scores of -3417.26 and -.3385.38, respectively, representing a major improvement to our model. A visual check of residuals (See Figure 10) confirms the normality of residuals which indicate the model does support the findings.

Figure 10

Middle School: School Discipline Model Residuals



As seen in Table 4, several factors are significant. Given the other variables are held constant, we can expect to see an increase in exclusionary discipline rates associated with decreases in rates of school climate (-.024), which confirms prior research (Cornell et al., 2018). Additionally, increases in rates of discipline were associated with increases in rates of disadvantaged students (.084). The largest association with school discipline rates came by way of rates of discipline at the division level, as each increase at the school level was associated with a .736 increase across the division. This finding is consistent when considering the high ICC of .84 at the within group measure in the null model. There was not a significant association between a school's discipline rate and *threat assessment*s – failing to support Hypothesis 4.

Table 4

Middle School Multilevel Models

Threat Assessment Activity

ICC	Division	.102
	School|Division	.103

null	**Coef**	**Z**	**p<|z|**	**95% Conf. Interval**	
year	1.34	31.07	0.000	1.32	1.37
Assessments	2.36	7.58	0.000	1.89	2.96

Physical Security Measures

ICC	Division	.119
	School|Division	.187

null	**Coef**	**Z**	**p<|z|**	**95% Conf. Interval**	
year	.116	4.67	0.00	.067	.165
Measures	1.25	19.42	0.00	1.13	1.98

AIC	**BIC**
2997.47	3022.36

Final Model	**Coef**	**Z**	**p<|z|**	**95% Conf. Interval**	
year	.083	2.98	0.003**	.0284	.138
Enrollment	.00075	2.38	0.000**	.0005	.001
Mental Health	.0204	.007	0.006**	.0059	.035
Disadvantage	.266	1.33	.183	-.126	.657

	Assessments	.0119	4.16	0.00**	.0063	.018
	Discipline	1.558	3.57	0.000**	.7017	2.41
	Climate	.0632	.89	0.371	-.0753	.202
	Measures	.0636	.17	.864	-.663	.7901
			AIC		**BIC**	
			2767.61		2821.59	
School Climate						
ICC	Division	.18				
	School|Division	.51				
null		**Coef**	**Z**	**p<|z|**	**95% Conf. Interval**	
	year	-.009	-.89	0.373	-.030	.011
	Climate	3.95	100.95	0.00	3.88	4.03
			AIC		**BIC**	
			1287.79		1312.33	
Final Model		**Coef**	**Z**	**p<|z|**	**95% Conf. Interval**	
	year	.0003	.04	.966	-.018	.019
	Disadvantage	-.311	-3.50	0.000**	-.486	-.137
	Enrollment	-.0001	-2.56	0.01**	-.0002	-.00003
	Assessments	-.0015	-1.46	.15	-.004	.0005
	Discipline	-1.81	-8.98	0.000**	-2.20	-1.41
	Div. Climate	.95	25.86	0.000**	.877	1.02
	Div. Discipline	1.56	7.12	0.000**	1.13	1.99
	Div. Assessments	.0006	.71	0.48	-.001	.002
	Climate	.473	2.7	0.007**	.13	.816
			AIC		**BIC**	
			610.11		673.90	
School Discipline						
ICC	Division	.42				
	School|Division	.84				
null		**Coef**	**Z**	**p<|z|**	**95% Conf. Interval**	
	year	-.012	-10.77	0.00	-.015	-.010
	Discipline	.151	17.07	0.00	.134	.169
			AIC		**BIC**	
			-2985.96		-2961.08	
Final Model		**Coef**	**Z**	**p<|z|**	**95% Conf. Interval**	
	year	-.0021	-2.10	.036*	-.0041	-.0001

Disadvantage	.084	4.49	0.000**	.047	.121
Enrollment	-.00002	-1.88	0.06	-.0004	8.51e-07
Assessments	-.00008	-.72	0.47	-.0003	.0001
Physical Security Measures	.002	1.71	0.08	-.0003	.0044
Climate	-.024	-8.17	0.000**	-.0295	-.0180
Mental Health Staff	-.0003	-1.26	0.21	-.0009	.0002
Division Discipline	.736	27.77	0.000**	.6844	.7883
Discipline	.106	5.33	0.000**	.0672	.1452
		AIC		**BIC**	
		-3417.26		-3358.38	

High School Analysis

As with middle schools, after merging and matching data across all three data sources to create the *Database*, high school data were subsequently cleaned. Specifically, schools were checked to ensure data was consistent and present across all time periods and that data entries were consistent in format and measures. Any school with data not present for all years was removed from the analysis[15]. What follows is a summary of descriptives for high schools and a model breakdown by research question.

Descriptive Statistics

For the final analysis, there were 115 school divisions with an average of 9.5 schools nested within (ranging from 4-76), for a total of 273. Compared to middle schools, there are more schools and more divisions represented in the high school dataset. High schools had a much higher enrollment average as compared to middle schools, with an average enrollment of 1216.84 students, relatively normally distributed, with a great deal of variation (*median* = 1200, *SD* = 664.28) ranging from 124-2915 students per school. On average, high schools had a slightly lower percentage of students that were identified as disadvantaged as compared to middle schools (41% vs 44%), but in several high schools the entire student population received such a designation (*median* = .40; *mean*

[15] Several schools in the data set were new or shut down/merged with other schools during the span of the 8-year data collection period. It is also possible that some schools refused to provide data to the Department of Education.

= .44; *SD* = .22; *range* = .023 -1.0). A full list of descriptive statistics across years is available in Table 5.

Table 5

High School Descriptive Statistics

Variable	N	Median	M	SD	Range
Division	115				
School	273				
Enrollment		1200	1216.84	664.28	122-2915
Student Disadvantage		.40	.41	.22	.023-1
School Level					
Threat Assessments					
2014		2	3.93	5.62	0-45
2016		3	5.64	7.97	0-58
2018		6	10.53	13.68	0-65
2020		6	9.72	11.65	0-79
Physical Security Measures					
2014		2	1.86	.63	0-3
2016		2	2.34	.68	0-4
2018		2	2.87	2.29	0-12
2020		2	2.93	2.14	0-10
Total Disciplinary Actions					
2014		98	119.54	92.54	1-523
2016		67	90.87	86.20	372-552
2018		76	92.64	79.12	340-553
2020		60	73.27	57.79	246-406
Rate of Disciplinary Actions					
2014		.10	.111	.076	.004-.427
2016		.07	.086	.074	.31-.427
2018		.07	.087	.07	.3-.744
2020		.058	.069	.055	.239-.422
School Climate					
2014		4.03	3.99	.28	3.01-4.64
2016		4	3.92	.48	3.17-4.66
2018		3.85	3.78	.42	3.12-4.4
2020		3.88	3.83	.24	3.22-4.44
Division Level					
Threat Assessments					
2014		3	3.93	3.53	0-19
2016		4	5.64	5.96	0-35
2018		8.05	11.49	12.5	0-65

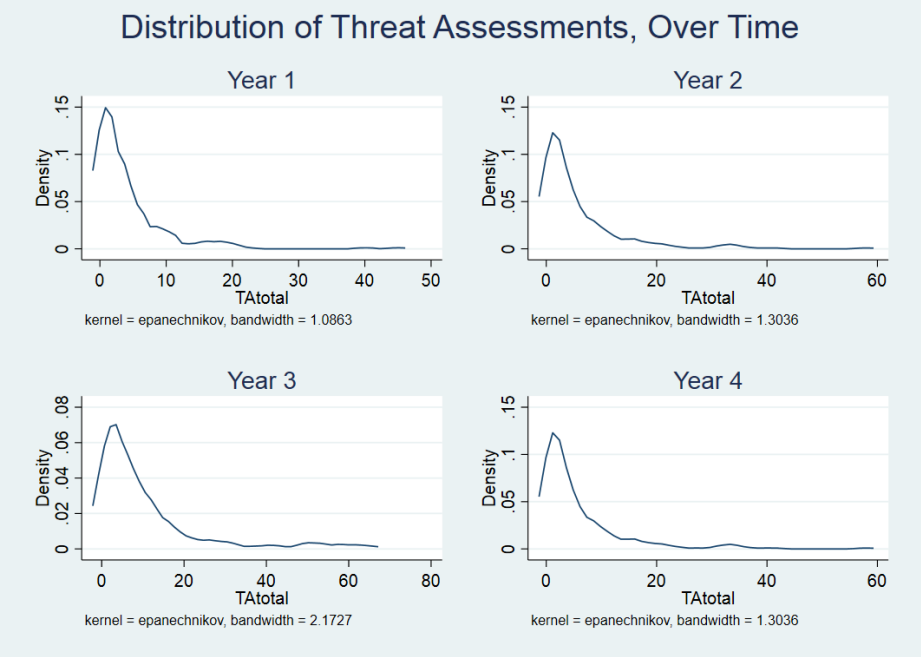
2020	7.67	12.20	14.47	0-91
Physical Security Measures				
2014	2	1.86	.44	0-3
2016	2.25	2.35	.49	1-4
2018	2.14	2.87	1.85	0-9
2020	2.33	2.94	1.74	1-9
Rate of Disciplinary Actions				
2014	.11	.11	.057	.015-.271
2016	.085	.086	.057	.232-.232
2018	.08	.087	.051	.22-.326
2020	.063	.069	.04	.177-.253
School Climate				
2014	4.02	3.99	.22	3.01-4.46
2016	3.98	3.92	.24	3.00-4.44
2018	3.83	3.78	.32	3.07-4.28
2020	3.86	3.84	.22	2.64-4.19

Research Question 1: Threat Assessment in K-12 Public Schools. Research question 1 explored the use of threat assessment teams in K-12 schools in Virginia. As with middle schools, given the growing attention paid to threat assessment over the years, I expected the number of threat assessments to increase over time. Similar to middle schools, descriptive statistics (Table 5) support Hypothesis 1 and shows that threat assessments have increased over the study period. For example, in 2014, the first year of observations, we see that on average schools conducted 3.93 threat assessments per year (*median* = 2; *SD* = 5.62) with a large range of 0-42. By 2018, the peak, high schools on average were conducting 10.53 threat assessments per year (*median* = 6; *SD* = 13.68) with an even larger range of 0-65. The year 2020, however, saw a slight dip in average threat assessments with 9.72 (*median* = 6; *SD* = 11.65) but a greater range with 0-79. This dip could be a result of many schools transitioning to remote education in April of 2020, however, school staff reported in the qualitative focus groups that they were still performing threat assessments during the pandemic. Similar patterns occurred at the division level, however, 2020 data remained high with an

average of 12.20 threat assessments (*median* = 7.67; *SD* = 14.47) with a range of 0-134 per division. Patterns were also similar as compared to middle schools.

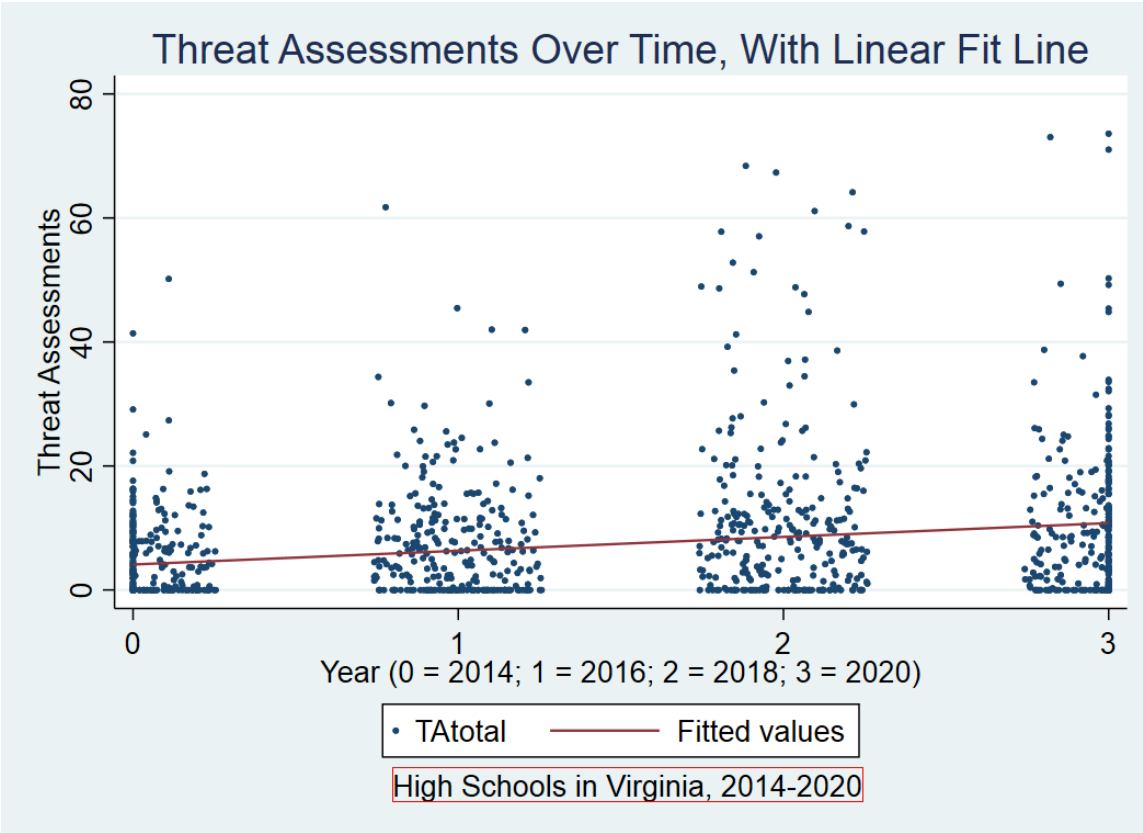
To explore the connection, and to examine threat assessment activity over time, I ran a multi-level model to assess the association between time and threat assessment activity. As time is a repeated measure, and middle schools are nested within their division, I first investigated the clustering effect to determine if using a multilevel model was appropriate, by analyzing the Intraclass Correlation (ICC). The null model displayed an ICC of .10 at the Division level and .129 at the school-within-division level. In other words, 10% of the variation occurs at the division level, while 12.9% of the variation lies within the division but between schools. Ultimately, the ICC demonstrates that 77% of the variation is within schools at the repeated year level. At each level, the ICC exceeded the threshold of .05, or 5% (Garson, 2019), which enabled me to reject the use of a standard OLS approach in favor of a multilevel approach.

Figure 11



Due to the heavy skew of threat assessments across each year (see Figure 11), I employed a Poisson model using incident rate ratios (IRR) for enhanced interpretability (Meyers et al., 2016). The model takes into account the 1,092 observations across four years of data and 273 schools nested within 115 divisions. The model is statistically significant, Wald chi-square = 883.18 (*df* =1; *p* <.001). Starting with the year 2014, the model constant is much high than for middle schools, indicating an average of 3.34 threat assessments per year with a significant increase of 1.36 threat assessments per year, ultimately supporting Hypothesis 1. The rate of change, however, was almost identical between middle and high schools (1.34 and 1.36, respectively). A visual representation of the linear growth can be seen in Figure 12.

Figure 12



Research Question 2: Hypothesis 2 - Physical Security Measures. Research question 2 explores the association between threat assessment and various school safety outcomes overtime. The first outcome I examined was a measure of methods to enhance physical security in schools, specifically, the presence of school security and school resource officers and access to the school by first responders. *Physical security measures* are represented by a count of three items by school. As with middle schools, in high school across the Commonwealth this was a fairly consistent measure throughout the years. However, high schools showed some growth over the years. In 2014, high schools averaged 1.86 physical security measures (*median* = 2; *SD* = .63) with a range from 0-3, by the peak in 2020 with an average of 2.9 measures (*SD* = 2.14; *Range* = 0-10), a higher average then in middle schools. *Physical security measures* similarly grew when measured at the division level (See Table 5).

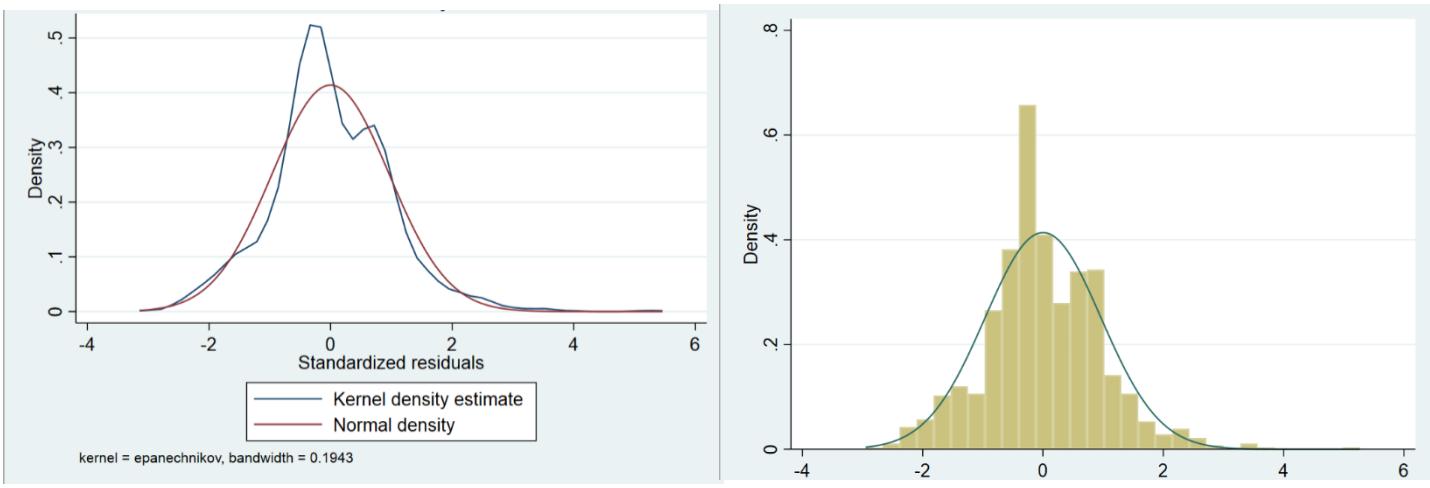
Hypothesis 2 proposed an association between threat assessment activity and *physical security measures* across time. To explore this connection, I ran a multi-level model. I first confirmed the clustering effect to determine if using a multilevel model was appropriate, by analyzing the Intraclass Correlation (ICC). The null model maintained an ICC of .11 at the Division level and .11 at the school-within-division level. In other words, 11% of the variation occurs at the division level, while 11% of the variation lies within the division but between schools. Ultimately, the ICC demonstrates that 78% of the variation is within schools at the repeated year level. At each level, the ICC exceeded the threshold of .05, or 5% (Garson, 2019), which enabled me to reject the use of a standard OLS approach in favor of a multilevel approach.

The null model takes into account the 1,092 observations across four years of data and 273 schools nested within 115 divisions. The model is statistically significant, Wald chi-square = 81.66 (df =1; p <.001). Starting with the year 2014, or the model constant, there is an average of 1.86

physical security measures in schools with a significant increase of .376 measures per year, both of which are higher than at the middle school level. To evaluate model fit, AIC and BIC were examined together. For this null model, the AIC was 4124.91 and the BIC was 4149.89. I added variables in by steps, checking the AIC and BIC for model fit at each stage. The final model included measures for disadvantaged students, enrollment size, threat assessment activity, discipline outcomes, school climate, and division level measures of climate, threat assessment activity, discipline outcomes, and physical security measures. As compared to the middle school model, the high school data was much more accepting of variables within the model. Prior to confirming the final model, I added in random slopes at each level – independently and jointly, which allows the slopes at each level to vary randomly but in accordance with the associated level. Using random slopes and both levels improved the model. The final model was improved with AIC and BIC scores of 2849.84 and 2929.13, respectively. A visual check of residuals (See Figure 13confirms the normality of residuals which indicate the model does support the findings.

Figure 13

High School: Physical Security Measures Model Residuals



As seen in Table 6, several factors are significant. Given the other variables are held constant, there is an association between physical security measures and discipline with every increase in security measures associated with a 1.367 (p = .04) increase in rate of exclusionary discipline. *Physical security measures* are expected to increase by .011 with every additional threat assessment performed by a school, offering modest support for Hypothesis 2, as it was with middle schools. *Physical security measures* are also associated with similar measures at the division level as each increase in measures was associated with a .995 increase at the Division level, perhaps demonstrating with influence of division level policy on individual schools. The increase in discipline outcomes (1.37, p = .04) could be explained by the correlation between the presence of school resource officers (which was one of the *physical security measures*) and higher rates of exclusionary discipline (Lawson et al., 2019).

Research Question 2: Hypothesis 3 – School Climate. The second outcome I examined was *school climate* - a measure of students' reported feelings on their safety at their respective schools. *School climate* is computed as an average of student responses by school. Unlike in middle schools, which reported almost identical averages throughout the years, *high school climate* appeared to be declining over the years. At its peak in 2014, students reported an average climate score of 3.99 out of 5 (*median* = 4.03; *SD* = .28) with a range of 3.01-4.64. By 2020, students reported an average climate score of 3.78 (*median* = 3.88; *SD* = .24) with a range of 3.22-4.44. Scores were similarly distributed across years when averaged at the division level (See Table 5).

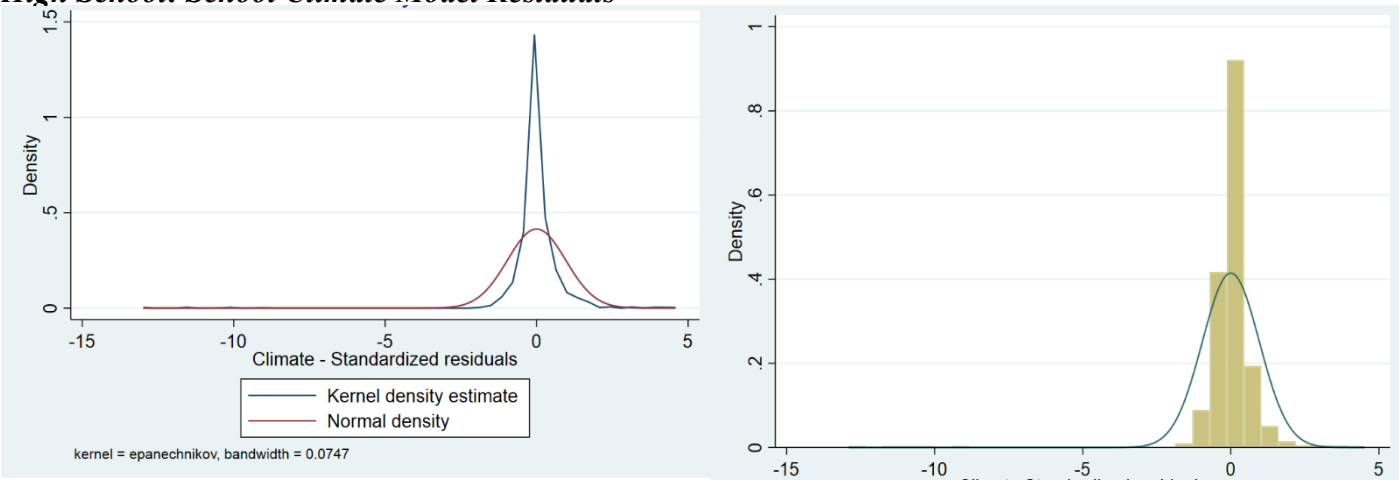
Hypothesis 3 proposed an association between threat assessment activity and *school climate* across time. Additionally, I sought to replicate findings of an association between *school climate* and threat assessment as previously reported by Cornell and colleagues (2017). To explore this connection, I ran a multi-level model. I first confirmed the clustering effect to determine if using a

multilevel model was appropriate, by analyzing the Intraclass Correlation (ICC). The null model maintained an ICC of .07 at the Division level and a .22 at the school-within-division level. In other words, 7% of the variation occurs at the division level, while 22% of the variation lies within the division but between schools. At each level, the ICC exceeded the threshold of .05, or 5% (Garson, 2019), which enabled me to reject the use of a standard OLS approach in favor of a multilevel approach.

The null model takes into account the 1,049 observations across four years of data and 273 schools nested within 115 divisions. The model is statistically significant across time, Wald chi-square = 42.41 (df =1; p <.00), which was different from the middle school data – which was fairly consistent across years. Starting with the year 2014, or the model constant, there is an average climate score of 3.95 in schools with a significant decrease of .06 across each year. To evaluate model fit, AIC and BIC were examined together. For this null model, the AIC was 950.72 and the BIC was 975.49. I added variables in by steps, checking the AIC and BIC for model fit at each stage. The final model included measures for disadvantaged students, enrollment size, threat assessment activity, physical security measures, discipline outcomes and division level variables measuring climate, discipline outcomes, and threat assessment. Prior to confirming the final model, I added in random slopes at each level – independently and jointly, which allows the slopes at each level to vary randomly but in accordance with the associated level. However, the model was not improved by including a random slope at either level. The final model was greatly improved with AIC and BIC scores of 401.45 and 465.88, respectively, representing a major improvement to our model. A visual check of residuals (See Figure 14) confirms the normality of residuals which indicate the model does support the findings.

Figure 14

High School: School Climate Model Residuals



As seen in Table 6, several factors are significant. Holding other variables constant, *school climate* ratings increase as one variable decreases: rates of school discipline (-1.02). Additionally increases in *school climate* were associated with increases in *school climate* at the division level (1.0) and increases in exclusionary discipline (1.05) at the division level (all significant at $p < .01$). Threat assessment activity did not significantly relate to *school climate* failing to support Hypothesis 3. The largest association with *school climate* came by way of rates of *school climate* at the division level, as each increase at the school level was associated with a .95 increase across the division. This finding is consistent when considering the high ICC of .51 at the within group measure in the null model. Additionally, reductions in the rate of exclusionary discipline at the school level confirms prior research (Cornell et al., 2018). An interesting finding, however, was that when considering exclusionary discipline at the division level, the opposite effect was true (although not as strong), perhaps indicating that school level discipline is more closely impacted by school level climate than discipline throughout the entire division.

Research Question 2: Hypothesis 4 - School Discipline. The final school safety outcome I examined was *school discipline*, more specifically *exclusionary discipline* – a measure of the rate of exclusionary discipline instances at a school per student per year. As seen in middle schools across the Commonwealth, *exclusionary discipline* rates remained low, on average, and appeared to be declining slightly and were lower than in middle schools. In 2014, the average rate for *exclusionary discipline* was .11 (*median* = .10; *SD* = .076) with what appears to be several high outliers as the rate ranged from .004-.472, even with not much variation. By 2020, the average rate was .069 (*median* = .058; *SD* = .055) with a range of .239-.422. Results were similarly distributed across years when averaged at the division level (See Table 5).

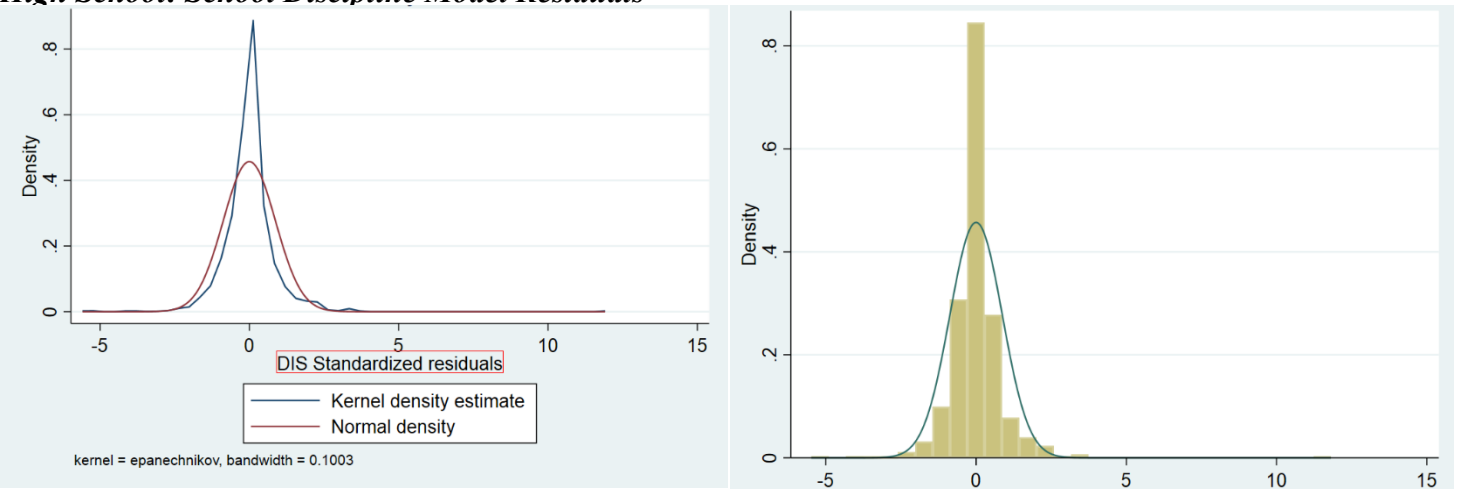
Hypothesis 4 proposed a negative association between threat assessment activity and school discipline across time, particularly that increases in number of threat assessments performed by a school would be associated with decreases exclusionary discipline. Additionally, I sought to replicate findings of an association between school discipline and threat assessment as reported by Cornell and colleagues (2018). To explore this connection, I again ran a multi-level model. I first confirmed the clustering effect to determine if using a multilevel model was appropriate, by analyzing the Intraclass Correlation (ICC). The null model displayed an ICC of .20 at the Division level and .74 at the school-within-division level. In other words, 20% of the variation occurs at the division level, while 74% of the variation lies within the division but between schools – a very large amount of the variation. At each level, the ICC exceeded the threshold of .05, or 5% (Garson, 2019), which enabled me to reject the use of a standard OLS approach in favor of a multilevel approach.

The null model takes into account the 1,092 observations across four years of data and 273 schools nested within 115 divisions. The model is statistically significant across time, Wald chi-

square = .185.74 (*df* =1; *p* <.001). Starting with the year 2013, or the model constant, there is an average disciplinary rate of .115 in schools with a significant decrease of .013 to the rate per year. To evaluate model fit, AIC and BIC were examined together. For this null model, the AIC was -3476.28 and the BIC was -.3551.31. It is important to note here that AIC and BIC are not absolute values, as such the smallest number still represents the best model fit (Garson, 2019). I added variables in by steps, checking the AIC and BIC for model fit at each stage. The final model included measures for disadvantaged students, enrollment size, threat assessment activity, physical security measures, climate, and division level variable for climate and discipline. Prior to confirming the final model, I added in random slopes at each level – independently and jointly, which allows the slopes at each level to vary randomly but in accordance with the associated level. Neither attempt, however, improved the model. The final model was improved with AIC and BIC scores of -4277.01 and -4207.63, respectively, representing a major improvement to our model. A visual check of residuals (Figure 15) confirms the normality of residuals which indicate the model does support the findings.

Figure 15

High School: School Discipline Model Residuals



As seen in Table 6, several factors are significant. Given the other variables are held constant, we can expect to see an increase in *exclusionary discipline* rates associated with increases in student disadvantage (.062), which confirms prior research (Cornell et al., 2018). The largest association with *school discipline* rates came by way of rates of discipline at the division level, as each increase at the school level was associated with a .981 increase across the division. This finding is consistent when considering the high ICC of .74 at the within group measure in the null model. There was a significant association between a school's discipline rate and threat assessments – for every additional threat assessment, the school discipline rate could be expected to increase by .0002, however, this was the opposite of the hypothesized direction and thus fails to support Hypothesis 4.

Table 6

High School Multilevel Models

Threat Assessment Activity						
ICC	Division	.10				
	School|Division	.129				
null		**Coef**	**Z**	**p<|z|**	**95% Conf. Interval**	
	year	1.36	29.72	0.000	1.33	1.38
	Assessments	3.34	19.76	0.00	2.96	3.76
Physical Security Measures						
ICC	Division	.11				
	School|Division	.11				
null		**Coef**	**Z**	**p<|z|**	**95% Conf. Interval**	
	year	.116	4.67	0.00	.067	.165
	Measures	1.25	19.42	0.00	1.13	1.98
			AIC		**BIC**	
			4124.91		4149.89	
Final Model		**Coef**	**Z**	**p<|z|**	**95% Conf. Interval**	
	year	.0167	.48	.629	-.051	.084
	Enrollment	.00004	369	.493	-.00007	.0001

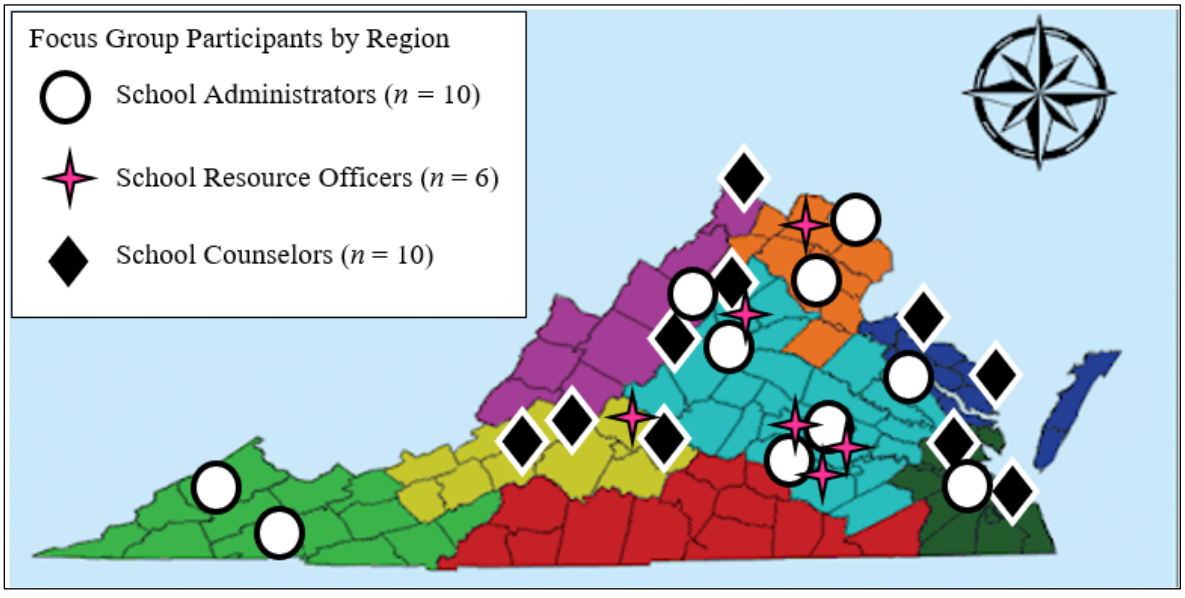
	Disadvantage	-.011	-.06	.951	-.351	.329
	Assessments	.0119	3.28	0.001**	.005	.019
	Discipline	1.367	1.99	.04*	.0216	2.71
	Climate	-.081	-.85	.395	-.2695	.1064
	Div. Climate	.118	.156	.447	-.187	.425
	Div. Assessments	-.0083	-2.25	.024*	-.0156	-.001
	Div. Discipline	-1.16	-1.24	.215	-2.99	.674
	Div. Measures	.995	40.67	.000**	.949	1.04
			AIC		**BIC**	
			2849.84		2929.13	
School Climate						
ICC	Division	.07				
	School|Division	.22				
null		**Coef**	**Z**	**p<|z|**	**95% Conf. Interval**	
	year	-.06	-6.5	0.00	-.083	-.044
	Climate	3.95	168.65	0.00	3.90	3.99
			AIC		**BIC**	
			950.72		975.49	
Final Model		**Coef**	**Z**	**p<|z|**	**95% Conf. Interval**	
	year	.0009	.01	.921	-.018	.019
	Disadvantage	-.037	-.65	.513	-.142	.071
	Enrollment	-7.18e-06	-.41	.683	-.00004	.00002
	Assessments	.0013	1.17	.242	-.004	.0005
	Physical Security	-.0019	-.33	.742	-.013	0.009
	Discipline	-1.02	-4.64	0.000**	-1.45	-.587
	Div. Climate	1.00	25.34	0.000**	.92	1.07
	Div. Discipline	1.05	.303	0.000**	.4543	1.64
	Div. Assessments	-.0007	-.67	.502	-.003	.374
			AIC		**BIC**	
			401.45		465.88	
School Discipline						
ICC	Division	.20				
	School|Division	.74				
null		**Coef**	**Z**	**p<|z|**	**95% Conf. Interval**	
	year	-.013	-13.63	0.00	-.015	-.011
	Discipline	.115	23.77	0.00	.106	.125
			AIC		**BIC**	

		-3576.28		-.3551.31	
Final Model	**Coef**	**Z**	**p<|z|**	**95% Conf. Interval**	
year	-.00001	-0.01	.988	-.0016	.0016
Disadvantage	.0622	5.02	0.000**	.038	.086
Enrollment	4.38e-06	1.08	.281	-3.59e-06	.00001
Assessments	.0002	2.68	.007**	.00007	.0004
Physical Security Measures	.0002	.29	.769	-.0014	.0019
Climate	-.004	-1.54	.123	-.0100	.0012
Div. Climate	.0066	1.41	.159	-.0029	.016
Div. Discipline	.981	35.62	0.000**	.927	1.03
		AIC		**BIC**	
		-4277.01		-4207.63	

Qualitative Strand

A total of 53 threat assessment team members volunteered to participate in the threat assessment team focus groups. Participants were sampled based on their role type and grouped by threat assessment activity level in their respective schools. Across the nine focus groups, 38 divisions (out of 132) and 53 schools (out of 661) were represented from across the Commonwealth. After scheduling, groups featured anywhere from 4-8 participants. There were several no-shows on the day of the focus groups. Ultimately, focus groups ranged from 2 to 6 participants (see Figure 16 for a breakdown by region and role type) and varied from 22 minutes to 93 minutes in duration.

Figure 16



All groups were conducted via Zoom and prompted with questions following a focus group guide (Appendix A). Responses were recorded, transcribed, and coded. A detailed accounting of the sessions by role type and threat assessment activity level are discussed below, including sections: (a) Definitional, (b) Threat Assessment Operations, (c) The Threat Assessment Team, and (d) Threat Assessment Efficacy. Each section corresponds with themes presented in the focus group guide and addresses the research questions:

RQ1. How are threat assessment teams being utilized in K-12 schools in Virginia?

RQ3. How do threat assessment team members perceive the role and efficacy of threat assessment in promoting school safety?

Major findings from the focus groups are presented by section in Table 7 below. The remainder of this section provides further details of threat assessment focus groups. Each section outlined above is noted in bold and consists of several categories which align with questions from the Focus Group Guide (Appendix A). The categories are noted italics. Within each category is a summary of the question posed to participants, a description of the codes applied, and a discussion of responses, first based on role type (counseling, administration, and law enforcement) and then by threat assessment activity level (none, average, and high). All codes, both a priori and posterior, appear italicized. As a reference, Table 7 outlines the subsequent sections, categories, and codes used.

Table 7

A Summary of Qualitative Findings

Definitional	▪ Most participants across role type and threat assessment activity level defined school safety in a holistic fashion, including a combination of physical security and school climate. ▪ School administrators were the only grouping to define school safety in terms of policies and procedures. This inclusion was also present in their identification on the biggest threat to school safety.

	▪ Very few participants mentioned a school shooting or active shooter when identifying the biggest threat to school safety. ▪ Threats that originated outside of the school but caused issues during the school day were most commonly identified as the biggest threat to school safety. These threats included social media and bullying. ▪ Consistent with their role type, school administrators were the only group to include policies and procedures in their definitions of threat assessment. ▪ Evaluations and investigations were the most commonly identified aspect in defining threat assessment.
Threat Assessment Operations	▪ Across all sub-categories of threat assessment operations (team formation, team training, and process), responses were consistent in their inconsistency, highlighting the decentralized nature of school and division policies and procedures. Even with the highly prescriptive nature of threat assessment, participants across all groupings reporting procedural inconsistencies. ▪ Of particular concern was that the process of threat assessment is seemingly not being carried out as advised by best practices, or as advised in best practices. Across all strata, participants reported threat assessments in their schools were not being carried out by the full team. ▪ Many participants noted an overall lack of resources in some schools, whether in follow-up, staffing, training, or just a general disadvantage for students and staff.
The Threat Assessment Team	▪ Despite complaints about the threat assessment process and inconsistencies in threat assessment operations, all subgroups reported an overwhelmingly positive perception of threat assessment team dynamics. ▪ The only negative perceptions of teams or team members appeared among schools with low threat assessment activity.
Threat Assessment Efficacy	▪ Participants across all role types and activity levels viewed threat assessment as an enhancement to school safety.

Definitional

Defining School Safety. To begin the focus groups, participants were asked to define school safety as it relates to their roles in schools. Based upon the holistic interpretation of school safety, and to align to data sources from the quantitative strand, a priori codes of *physical security*, *school climate*, and *other* were developed prior to the focus groups. Codes of *physical security* were applied when the participant mentioned physical security measures such as door locks, security, or

other physical security measures. The code of *climate* was applied when participants mentioned any response related to feelings or perceptions of safety. The code of *other* was meant to capture any other responses. After coding was completed, a posterior code of *combination* was implemented as numerous participants across focus groups described school safety in a more holistic fashion and often combined the elements of climate and physical security to describe and define school safety. To qualify for the code of *combination*, the participant had to explicitly respond in a way that would have been coded as both climate and physical security. A combination definition of school safety which reflected physical and climate measures was common throughout all groupings—evident regardless of role type or threat activity level.

Among role types, the greatest degree of variation was seen with school counselors. Over half (6/10) of all school counselors defined school safety as a combination of *physical security* and *school climate*. No one in the school counselor focus groups described school safety in terms of just *physical security*, but two participants did offer a definition that only represented *school climate*. Additional responses (2/10) were categorized as *other* – one reflecting that school safety should not only be defined as during school hours (but also follow students to their homes), another defining it as "policies and procedures for the worst-case scenario." The latter response was prevalent among school administrators; over half (8/12) of school administrators singularly responded that school safety was some sort of policy, procedure, or protocol that all should know. One school administrator likened school safety to an airplane – "knowing all the exit routes so everyone can be safe and secure." Aside from the one school counselor who mentioned policies, this response was uniquely present and dominant in school administrator focus groups. All other responses by school administrators (3/12) represented a *combination* view of school safety that encompassed physical security and climate. Law enforcement focus groups were in the most agreement among the

different role types as it relates to defining school safety as only one participant defined school safety with solely *physical security* while all others used a *combination* definition.

When grouped by threat assessment activity levels, no clear pattern emerged among participants. Focus groups representing high activity schools showed the most variation in responses about school safety, with over half (6/10) of participants defining school safety as a combination of *physical security* and *school climate*, two defining in simply as *school climate*, and the rest (2/10) giving responses coded as *other*. Participants from schools with average threat assessment activity were evenly split when defining school safety, with half (4/8) of respondents providing a *combination* response (physical security and school climate) and the other half giving a response classified as *other* (the most common being "maintaining regular safety protocols"). The low activity group was similarly split.

While no overt pattern emerged between activity groupings, two findings of note emerged on the topic of school safety: 1) school safety professionals across role type defined school safety in a holistic fashion, combining *physical security* and *school climate*, and 2) school administrators were the only group to define school safety outside of this paradigm, instead considering school safety in terms of preparedness and administrative plans, policies, and procedures.

Defining Threats to School Safety. Participants were next asked to identify the biggest threat to school safety in their schools. A priori codes of *external threats*, *internal threats*, and *other* were developed prior to the focus groups. Codes of *external threats* were applied when the participant mentioned any threat that happened outside of the school, the code of *internal threats* was applied when a threat was identified that occurred solely inside the school, and the code of *other* was meant to be a catch-all for any other responses. After coding was completed, a posterior code of *external-to-internal threats* was implemented as numerous participants across focus groups

explicitly identified threats that began outside of the school and then became a concern internally. To qualify for this code, participants had to be explicit in noting that the threat originated outside of the school but caused issues inside the school grounds. While all groups provided an array of answers, only 2 participants noted school shooters or an active shooter has the biggest threat to school safety; one even qualified the threat as "very unlikely."

School counselors were mixed in identifying the biggest threat to school safety; however, responses were largely considered to be *external-to-internal threats*. Specifically, school counselor's identified social media, gang violence, prescription drug abuse, and bullying all as concerns that originate outside of school hours/grounds but cause the most serious problems during the school day. One counselor identified an issue that was separately classified as internal and external, and subsequently became a concerning theme identified throughout the focus groups – a lack of community partnerships (*external threat*) and a complete lack of resources (*internal threat*). Additionally, school counselors identified other *internal threats* to safety such as drastic generational divides between students and staff and student mental health. The latter concern was also raised in the law enforcement focus groups along with a lack of conflict resolution and de-escalation training for students, all coded as *internal threats*. Those in law enforcement also identified social media and bullying as an *external-to-internal threats* and heightened the concern with the example of students bringing weapons to school to address apparent external social media disagreements. This group was also one to mention an active shooter as an external threat to school safety. While one school administrator mentioned school shootings as an external concern, it was coupled with a caveat that they were very unlikely to occur, and instead *external-to-internal threats* were more concerning among the administrator focus group. Specifically, school administrators identified prescription drug abuse and social media as *external-to-internal threats*. Social media was

one threat that was cited in every focus group as a threat to school safety, with many participants noting that issues (bullying, arguments, fights, gang activity) originate on social media and then become physical on school property. School administrators represented the role most likely to list an *internal threat* as the biggest concern to school safety, with participants mentioning complacency, bullying, staff attitude and culture, inclusivity, mental health, data accountability, school climate, and safety planning and training; the latter being an interesting pattern among school administrators when discussing aspects of school safety which was not present in other role types.

There were no apparent patterns across threat assessment activity as it concerns identifying the biggest threats to school safety, as all responses were fairly evenly split within activity levels. One exception that stands out, however, was seen in participants from schools with no threat assessment activity. Participants from this group were the only to identify solely *internal threats* as the biggest threat to school safety, while all others activity levels displayed an equal mix of *internal, external, and external-to-internal* when identifying the biggest threat to school safety.

Defining Threat Assessment. Transitioning the conversation to threat assessment, focus group participants were asked, "What does threat assessment mean to you, in your current profession?" A priori codes were developed in line with the United States Secret Service (2004) threat assessment definition, including *Team, Identification, Evaluation/Investigation, Classification, Action Plan, Follow-up,* and *Threat*. Any mention of the listed words resulted in the code being applied and, for this topic, multiple codes were applied to the same response. Across all focus groups, no respondents defined threat assessment in a manner that included all separate components. Both school counselors and school administrators heavily identified *evaluation* and *investigation* as central to the meaning of threat assessment; for both groups this was followed in

highest frequency by the code *threat*. School administrators were the only role type to repeatedly identify having a procedure, supports, and a clear process in place as a part of the threat assessment definition, a continuing pattern among this role type. Along with law enforcement participants, school administrators, also consistently identified having an *action plan* as part of their definition for threat assessment while only one school counselor included having an *action plan* as part of their definition. Similarly, no school counselors included a *follow-up* as part of their definition of threat assessment, while just one school administrator and one law enforcement participant mentioned *follow-ups*. Although *follow-ups* are not explicitly part of the threat assessment process, as suggested by several focus group participants, it is an important step to determine whether the threat has been neutralized.

One interesting response to the threat assessment definition prompt came across all law enforcement focus groups: paperwork. In addition to defining threat assessment as containing *evaluation, action plans*, *communication*, and *teamwork*, all but one law enforcement officer responded immediately with 'paperwork' to the prompt. When assessing responses by threat assessment activity level, no clear patterns emerged except *that evaluation/investigation* appeared as the top response across activity level. The emphasis on *evaluation/investigation* may imply that regardless of role type, for many this is the most important, or most emphasized, aspect of threat assessment.

Threat Assessment Operations

After establishing definitional standards across focus groups, participants were probed to gain a clearer insight into how threat assessment teams are operating throughout the Commonwealth.

Team Formation. Focus group participants were asked to describe, to the best of their knowledge, how threat assessment teams were formed in their schools, to include length of service, selection of members, and team member consistency from year to year. Across role type and activity level, no clear pattern emerged, which may suggest that inconsistency is prevalent across the Commonwealth. It was clear, however, that school counselors, regardless of threat activity level, believed that school administrators held the power in regard to threat assessment team formation, as one participant noted "the Principal chooses," another aptly replied "we are voluntold." In this particular group, another counselor concurred, noting that their team is assigned by administration and assignment is based upon "who admin wants, not necessarily who is the best fit." It also became clear from school counselors that not every threat assessment is handled by the entire team or consistent team members, as one school has a team for each grade level, made up of a school counselor and school administrator and "only involve the SRO if it is critical or a high-level threat because we want to be culturally aware." Before the moderator could probe any deeper, another school counselor responded that their "SRO is a valuable part of the team because they can pull community information that school staff may not know." This piecemeal processing was also present in other schools as another counselor noted their school follows the Department of Criminal Justice Services (DCJS) guidance[16], but that not all members participate in every threat assessment. Perhaps the most surprising (to the other focus group members as well as the moderator) response among school counselors came from a participant who proclaimed, "I am the threat assessment team – I do all of the threat assessments, then I just tell the Principal." This solo threat assessment team did seem to be an anomaly, however, as another school counselor countered with experiences of an expansive team, which even included division level members if the assessment was complex.

[16] Based upon VA Code mandating the team should have members with expertise in school administration, counseling, and law enforcement.

Involvement at the division level was also reported across school administrator focus groups. One administrator noted that their division-level threat assessment team actually conducted all of the threat assessments in their school division and that school-level administrators acted more as 'fact-finders', filling out reporting forms for the division team to conduct the final assessment. Two other administrators reported their school will sometimes request division-level assistance if the threat assessment is complex. Several school administrators mentioned that while membership on the threat assessment team remained consistent from year to year, that the actual assessments were performed based on who was available at the time, with one administrator stating that "we have a threat assessment team on paper, but it is really just who is available at the time." A separate school administrator noted their full team only met when the threat was determined to be moderate or high. Adding an extra layer of inconsistency, several school administrators reported their teams were assigned by grade level, while others were assigned to certain letters of the alphabet (representing student last names).

Interestingly, the law enforcement focus groups did not report the same levels of inconsistency as the other two role types, perhaps because they are not employees of the school and are not privy to the inner school workings. Several participants responded that their teams were consistent from year to year and made up of the required members. Only one law enforcement participant mentioned not being on the team for all threat assessments, noting they were only brought in if the threat was considered moderate or high – similar to responses from those in administration and school counseling. The theme of inconsistency persisted across threat assessment activity levels in regard to team formation.

Team Training. A key component of conducting a threat assessment is for all team members to be trained and to train together (Stohlman et al., 2021). Participants were asked to

describe their threat assessment training and any training their teams had together. A priori codes were changed upon analysis to account for nuances in responses from participants. New codes were developed to reflect patterns among participants: *Ideal*, representing a description of training that was in line with threat assessment best practices; *Consistent*, representing responses indicating annual training or a high-level of training; *Needs Improvement*, accounting for responses that failed to meet recommended standards but had some level of training; and *None*, reflecting schools with no training whatsoever. Surprisingly, at least one participant in each category (role type and activity level) indicated receiving no training on threat assessment, despite serving on a threat assessment team (a code of *none*). Similar to team formation, inconsistency in training experiences was a consistent pattern across all categories. Among school counselors, only one reported an *ideal* training scenario in which teams across the division come together to receive annual DCJS training and also all division staff receive a general threat assessment awareness training. At the other extreme, two school counselors indicated receiving no training (*none*) with one belaboring, "no division-level coordination, we are on our own" and another noting that "team training fell off" years ago. The most common code, across all groupings, was *consistent*. For school counselors several indicated annual training for staff or that school administrators attend division-level training and then provide refreshers for school staff. One counselor expressed frustration with threat assessment training stating, "not everyone goes to training, it should be in house, face-to-face with the whole team, not just passing along materials." This statement garnered a code of *needs improvement,* a singular instance among school counselors.

Schools in *need of improvement* (4) was common, however, among school administrators. Several (3) school administrators experienced similar training situations to school counselors, in which team members attend DCJS trainings, not together, and then return to share details of the

training with other team members. Several (4) school administrators also indicated *consistent* training, noting that team members received training every year, but that teams do not train together. Uniquely, one school administrator relayed a rather centralized threat assessment training protocol in their division, as the division-level threat assessment team coordinator visited every school in their division annually and trained teams together, representing an *ideal* training dynamic. A member of the law enforcement focus group noted a similar *ideal* training experience in which one day of the annual school resource officer (SRO) training hosted by their Sheriff's office was dedicated to threat assessment and school-based team members attended with the schools' SROs. None of the law enforcement participants responded with answers indicating a *consistent* code, instead, the remaining focus group members (2) reported receiving no formal training on threat assessment (a code of *none*) or only receiving generalized training or minor training of less than 30 minutes (codes of *needs improvement*).

The theme of inconsistency was again persistent across threat assessment activity levels with coding differences evenly split throughout activity level. One pattern of note was that participants from schools with no threat assessment activity were the only group in which no one described an *ideal* training scenario in their schools. This pattern is not surprising, however, as it is logical that school not practicing threat assessment training best practices would also under perform threat assessments.

Perceptions of the Threat Assessment Process. Rounding out the threat assessment operations questions, participants were asked to share details and thoughts on the threat assessment process in their schools and as a whole. A priori codes of *positive*, *negative,* and *other* were conceived prior to the focus groups, with a code of *positive* being awarded to responses reflecting an overall positive tone, a code of *negative* reflecting an overall negative tone as it concerns the

threat assessment process, and *other* to account for any neutral or otherwise un-codable responses. To reflect variations in responses, a posterior code of *mixed* was developed to account for the wave of responses that included both positive and negative answers from participants.

Across role type, school counselors were the only grouping that did not view the threat assessment process in their schools in a positive light. Instead, many (4) in this grouping provided *mixed* responses such as "process is good but follow through isn't what it should be and administration do not always follow our recommendations and overrides team determinations, maybe because trained members are not always available so it's whomever it free" or "most [staff] are now on board but there is still push back on the formula" and "threat assessment is supported, but largely for the checkbox or just for documentation." Even more (9) school counselors reported *negative* views of the process, stating "if people followed the actual process, in theory is it good, the steps make sense, but we have lost sight of what the right way even is." *Negative* responses centered around the process itself, with some counselors reporting "lots of repetition in the process, lots of changes on the fly, and the documents feel antiquated and robotic" or that the process is "very clerical, I am afraid students get lost in the policy and procedures, [it is] lots of paperwork." This sentiment was prevalent across school counselor groups with others noting "we do threat assessment just to cover ourselves" and "it should be a team process, but usually just one person does it" and "we have a protocol, but no one follows it, usually just one person does it – me, and discipline comes from my meeting, which is inappropriate." The latter statement garnered agreement from another counselor who concurred "I am not a disciplinarian, so it can be a huge waste of time – it is not functioning correctly." Perhaps the most negative response came from a counselor who earlier in the focus group noted not having many resources in their division, relayed that "I am the threat assessment team, we have no team, it is very scary and ethically problematic

with lots of pressure on me." This declaration again garnered shock and sympathy from other participants.

Opinions on the threat assessment process were more favorable among school administrators, with few (2) responses being coded *negative*. *Negative* responses from school administrators centered around the structured nature of threat assessment, such as "central office instituted a formulized threat assessment process with specific protocols, for the day-to-day it is very rigid and top down with little room for input" and that the process "can be hindering at times – lots of forms to fill out that draw attention away from the actual situation, filling out forms is a two-person job." Conversely, several (3) school administrators viewed the structure *positively* noting the process is "streamlined" and provide "clear cut procedures with directives and forms from central office." One administrator *positively* reflected that "team specifics and protocols come from the State and central office, but we [their school] have a lot of flexibility, the process is helpful in leading to outcomes and only gotten better over the years" and frankly noting that "the process is good, can't complain." Several administrators (5) provided *mixed* reviews of the threat assessment process with many indicating the "process is fine" or "we take it seriously" but had complaints such as the "protocols feel designed for a larger school system, not smaller ones. [I am] not dismissive of the process as a whole, it just doesn't quite fit." Others agreed that the process "can be hindering because it is so structured."

The sentiment surrounding the structured nature of threat assessment also appeared among school resource officers with one noting the process "could be more streamlined" and that the "police department's version is shorter, the schools' is long and redundant – it is good but could be more concise." *Mixed* responses such as these were common in the law enforcement focus groups, but this role type viewed the threat assessment process most *positively* as compared with other role

types. Participants from the law enforcement focus groups only provided *positive* (5) and *mixed* (3) responses. Those coded in the former commented, "it is a good, researched process" and an "important part of the job that gives everyone a good sense at the end." One SRO noted "the team dynamic is crucial because we all wear different hats and bring different expertise and feedback," with another SRO concurring and elaborating that the process was "good and needed, especially for follow-up and documentation."

When analyzed by threat assessment activity level, responses were fairly *mixed* throughout, with no clear pattern emerging. Overall, however, from a team operations standpoint, the pattern of inconsistency began to appear. Whether in reporting on team formation, team training, or team process, focus group participants, across role type and threat assessment activity levels, were consistently inconsistent concerning threat assessment operations within their individual schools and divisions.

The Threat Assessment Team

After discussing perceptions of the threat assessment process, participants were probed deeper about threat assessment teams, specifically regarding team dynamics, times the team worked well together and when they did not, about power dynamics, and about any changes participants would like to see as it concerns threat assessment teams in their schools.

Team Dynamics. The first in a series of prompts about threat assessment teams asked participants to reflect on dynamics within threat assessment teams at their schools. Responses were coded similar to codes applied to threat assessment process: *positive, mixed, negative,* and *other.* Unlike their thoughts on threat assessment processes, school counselors' responses were overwhelmingly *positive* and *mixed*, with no responses being coded as *negative*. In contrast to their views on the threat assessment process in their respective schools, school counselors

overwhelmingly described team dynamics in a positive light as compared to other role types. In fact, the school counselor focus groups were the only role type to not have any responses coded as *negative*. Over half (6) of school counselors reported *positive* team dynamics within their schools, claiming "we have the greatest team" and that their team "works well together – we have a good flow and depend on each other… we are always willing to grow and adapt." Yet another counselor stated their "school and team works well, the school supports the team." This was a common sentiment among school counselors as one reported that "everyone has a common goal and the work is important," with another counselor agreeing, "we're all on the same page and work well together." Even counselors who did not view their team completely in a positive light gave responses coded as *mixed* (4), for example stating their team "works well together, but lots of room for improvement." Another *mixed* response described that "working with others can be a blessing or a curse, sometimes you have too many hands in the pot." This particular response garnered agreement among other group members with a counselor adding that their team has "no big disagreements, [but] more disagreements around appropriate consequences."

Similar to the rather positive responses from school counselors, school administrators were divided between *positive* (10) and *negative* (7) responses. Several administrators (4) who reported *positive* team dynamics were not very verbose or expansive in their responses with many simply stating "no disagreements." Others, however, reported their teams operated "fairly smoothly" and elaborated that "all members come to the table with info and has the opportunity to be heard, their voices have value – it helps in sharing info so everyone understands the context" and that "bringing in the whole team helps to catch things only one person may have missed." In contrast, administrators who reported *negative* views often pinpointed specific team members affecting the team dynamics, mainly school counselors. For example, one administrator noted experiencing

"some disagreements around code of ethics for counselors – what info they are willing to share, sometimes background knowledge helps us understand the threat, but we have had disagreements about what they felt should be disclosed and we have made false decisions because we did not have information." As a follow-up to this statement, another administrator agreed and expressed there was "disagreement around communication as they choose not to disclose because it violates students' rights." One school administrator admitted to being the source of disagreements in their threat assessment team, stating "I'm the disagreement, some admin try to make things more serious just so they can remove students from the school environment, I stop that."

Other administrators responding *negatively* centered on various conditions in their schools or divisions as the source of any *negative* team dynamics. One administrator cited politics and national events coloring assessment in their school as team members were "hyper vigilant, which created a weird dynamic," while others noted specific challenges such as "we need more training and resources for follow-up." Two other administrators also cited resources: "we are under resourced with an SRO and school counselor that covers three counties." The conversation around resources and staff coverage was also present among law enforcement focus groups whose views of team dynamics were evenly split between *positive* (2), *mixed* (2), and *negative* (2) codes. One SRO reported that in their division "SROs are short-staffed, cover multiple schools, and are just spread thin, so it is hard to develop relationships in schools… we should be included more, but are not and miss a lot." This particular SRO also discussed the political climate in their division, stating "some admins will hide information and some will overshare, under-sharing limits the resources and services kids can get." Other SROs countered that while their team "works well together, there are times when the school and law enforcement see things differently – the school sometimes makes a mountain out of a molehill and I have to explain why a kid was not arrested. The school tends to go

from 0-60 rather quickly." While several SROs addressed issues within their teams and schools, others were complimentary of the team, reflecting "I'm fortunate to work at only one school and I have a tight relationship with the principal and team here;" "the team dynamic is crucial because we all wear different hats and bring different expertise and feedback;" and "it's just majority rules, no power struggles, and any uncertainty goes to Central Office – I am very lucky and fortunate."

Views of team dynamics also displayed an interesting, yet not surprising, pattern across threat assessment activity levels. All *negative* (9) views of threat assessment team dynamics clustered within the no activity groupings. Participants from high activity schools reported a mix between *positive* (10) impressions and *mixed* (2) perceptions of team dynamics, while participants from average activity presented a similar mix between *positive* (8) and *mixed* (2) perceptions. Overall, focus group participants overwhelmingly viewed threat assessment team dynamics in a *positive* (18) light, with many less providing responses coded as *mixed* (6), and *negative* (9).

Power Differentials. Following a discussion of team dynamics, participants were asked about power dynamics within their particular school threat assessment teams. A priori codes of *concentrated* and *dispersed* were originally developed in line with prior research on team power dynamics (Greer et al., 2017; Tarakci et al, 2016). However, after numerous attempts to redirect in session, and upon multiple readings of the transcripts, it became clear the question, and subsequent prompts, were not eliciting the intended responses from all participants. Instead, a summary of responses by role type is provided.

School counselors were rather split in their perceptions of power dynamics among threat assessment teams in their schools. Two counselors believed that there is equal power between their role and school administrators, noting "counselors and administration meet, have a discussion, and make decisions, but not the whole team." Another counselor implied they themselves held much of

the power when it comes to threat assessment, stating “counselors do the initial assessment and decide to escalate to the whole team.” If there were a common sentiment among counselors, it was this as another noted that in their school threat assessment “defaults to counselors, administration would just rather we take care of it” with another concurring “it defers back to counselors, administration comes in at the end and defers to the work already completed – there are never any feuds.” Other counselors, however, felt very strongly that administration held the power when it came to threat assessment, stating “administrators make the final decision and they do not go to training” and “it is very clear that admin is the decision-maker, they get the final call and I’m happy with that.” Similarly, one counselor reported “we are all equal members on the team, but administration can overrule the team decision, they make the final decision.” Only one counselor reported differently, noting there is an “even dynamic among team members, we escalate even if one member feels it.”

Among school administrators, it appeared to be a consensus that administrators held the ultimate power in the group, but that all team members had an equal say. For example, one administrator reported “everyone has a voice and admin has the final say is not mutually exclusive – I am comfortable advocating for my position, but it is ultimately the Principal’s call.” Five other administrators agreed with this position, with one noting “I would not feel comfortable with a final decision if it was not the consensus.” Other administrators viewed team power dynamics as much more harmonious, noting “we trust one another and know we have the same goal – no power struggles” and “some passions within the team, but we all have an equal say.” One administrator noted their dynamics in detail, saying “a counselor or administrator initiates the process, and we disagree all the time, but more on intervention strategies, not level of threat. We settle

disagreements on consensus, and everyone shares power. We have an agreement with local law enforcement, and they do not take action unless the threat is imminent, or we request it."

Amongst school resource officers, there was also a split in perception of power on the threat assessment team. One participant seemed to view the process and power positively noting "everyone gets a say and I feel equal on my time. Central Office are the real gatekeepers, any disagreements go to Central Office and they can order a threat assessment to be redone if it is done incorrectly." Two other SROs agreed the principal had the most power, reporting "I don't have a lot of power in my division, the Principal makes the final decision." Another SRO reported that while they did not have "a good relationship with my school administrator and we do not share information, but the threat assessment team respects my opinions." Ultimately, when it comes to power dynamics on the threat assessment team, no clear patterns emerged.

Recommendations for Change. To round out the threat assessment team questions, participants were asked if there were any changes they would make to threat assessment at their schools. Posterior codes were created to reflect responses provided across categories. The code *resources* was applied to responses that recommended adding more members, funding, or other resources to the threat assessment teams. A code of *training* was applied to participants recommending more or different training. The code *process* was applied to comments recommending changes to the school's threat assessment process and the code of *follow-up* was applied to responses that advocated for changes to procedures after a threat assessment is conducted. Recommendations could receive multiple codes.

School counselors were very mixed in their recommendations with mentions of needed changes to *resources* (5), *training* (3), *process* (8), and *follow-up* (5) throughout groupings. School administrators were similarly mixed as participants recommended changes to *resources* (1), *training*

(2), *process* (5), and *follow-up* (4) throughout groupings. Only one school administrator answered that no changes were needed. Similarly, one school resource officer had no recommended changes while others recommended changes to *resources* (1), *training* (1), *process* (2). Responses were similarly dispersed across threat activity level. Under the heading of *resources,* several participants just mentioned how under-resourced their schools and divisions were: "schools should not be the only resource hub," or their divisions should "hire more counselors and give more resources all around" or "we need more SROs to cover schools so we can build relationships with school personnel, understaffing leads to a lack of consistency," another noting specifically that "I just wish we had more resources, our CSB (Community Services Board) has a lot of turnover and our high risk kids really need continuity."

Recommendations for more *training* were fairly straightforward across focus groups, with several participants recommending that "every go to training" and that it be "face-to-face, in house so that teams can train together." Suggestions for consistency were also present in responses aimed at the threat assessment *process*, for example "I don't like filling out forms" or "it is a lot of paperwork, we need to make it easier and more streamlined" and "consistency throughout the whole school division" would be helpful.

Threat Assessment Efficacy

To close out each focus group, participants were prompted to reflect upon the definitions of school safety they provided at the beginning of the session. Participants were then asked if they believed threat assessment to be effective at enhancing school safety. A priori codes of *positive, mixed,* and *negative* were then applied to participant responses. Across all focus groups, no participants provided responses that were categorized as *negative*. The most positive responses occurred across the law enforcement focus groups with all but one providing a *positive* response.

When asked if threat assessment enhances school safety, three SROs responded "absolutely" with one elaborating "it gets kids the services they haven't had, services they desperately need, it is incredibly helpful to catch kids that would have slipped through the cracks." Another SRO agreed stating "it can alert more people to an issue and kids get more resources – it triggers a system to fix things." The sentiment of providing services seemed a common expression throughout all focus groups and underscores the thought of school safety as holistic in nature. For some, the recognition of the threat, and the subsequent actions, enhanced school safety, stating "it opens lines of communication and acknowledges a threat and addresses it before it gets worse," with others adding that threat assessment is "definitely effective – it makes us more aware and more confident" and "just having knowledge that you dove in and offered assistance, analyzed the situation, and mitigated a threat – I don't know what we did in the past, but I couldn't imagine doing this job without threat assessment, it gets positive conclusions." Even the one SRO who provided a response coded as *mixed* viewed the effectiveness in a positive light, but complained about the process stating, "it really does help, but it can be a pain – it is 10% awesome, 90% paperwork."

Several (3) school administrators also provided conditional responses that were coded as *mixed*, for example that threat assessment was effective "if done correctly" or "it is effective, but we do not use our team as much as we should." All other school administrators (8) provided *positive* responses, such as "Yes [it is effective] and way better than the nothing we had before, no more dropping the ball like in the past" and "numerous cases are easy to deescalate the potential for violence because of interventions, conversations, and engagement – it enhances school safety." Another administrator noted, "school is definitely a safer place for having it because there's situations that have come through that we've been able to mitigate because of the process – definitely worthwhile."

In comparison to other role types, while no school counselors reported *negative* perceptions, those in this grouping were more likely to provide conditional statements (8) about threat assessment and school safety. For example, one counselor noted "big picture, it would be better if we had more resources to be proactive rather than reactive – it is important and helpful though" and "it's a blessing and a curse, lots of pressure but a good process." Another noted that threat assessment is "excellent if used properly – we skip over so much – we don't even do it correctly, it has the potential to be good, but I'm not sure if it is effective right now." Two other school counselors responded with a *positive* assessment of threat assessment and school safety, stating "I've seen how it can keep the school safe, it's never done the opposite, it has never put us in a more risky position" and "sometimes we learn something new about a kid and we are able to put resources in place to make them and us safer." Responses were similarly mixed across threat activity level, with no clear patterns, except participants mostly viewed threat assessment as having a positive impact on school safety.

Data Integration

Once the quantitative and qualitative data were collected and analyzed, the two strands were merged using an *integration through narrative* method. Results of the two strands were compared by theme, specially by research question (Fetters et al., 2013). For ease of understanding, the merged results are presented in a joint display to showcase topical findings from the two strands (Creswell, 2014). Findings are displayed in the integration matrix displayed below (Table 9) and are discussed in more detail in the subsequent chapter. The table is presented by research question, outlining contributions from the quantitative and qualitative strand and also includes a *fit of integration* designation. As outlined by Fetters and colleagues (2013), the designations include:

- *Confirmation* - findings from the two strands confirm one another, which produces similar conclusions and enhanced credibility;
- *Expansion* - findings from the two strands diverge from one another and expand insights through addressing the differing and complementary aspects;
- *Discordance* - findings from the two strands are inconsistent, contradictory, or in complete disagreement.

Table 8

Data Integration

Theme		Quantitative	Qualitative	*Fit of Integration*
Threat Assessment in Schools		Use of threat assessments has increased over time in secondary schools.	Questions of overall lack of fidelity to threat assessment guidelines, particularly concerns over consistency in the process, training, and resources. Highlighting the inconsistencies in threat assessment operations across schools.	***Expansion*** – qualitative findings expand upon quantitative findings providing context and insights. While threat assessments have increased, concerns remain regarding implementation fidelity and resource availability.
Threat Assessment & School Safety	Physical Security	Increases in threat assessments are associated with increases in physical security measures.	School safety was consistently defined in a holistic manner, encompassing physical security and school climate. External threats that manifested internally at school were identified as the biggest threat to school safety. Threat assessment teams themselves were consistently viewed in a positive light. Threat assessment was noted as a valuable enhancement to school safety.	***Expansion*** Practitioners consistently viewed school safety in a holistic fashion as mirrored by the use of three different outcome variables all as school safety. Across outcomes, quantitative findings were inconsistent, which were consistent with qualitative views on threat assessment processes.
	School Climate	Increases in threat assessments are not associated with reported feelings of safety in schools.		
	School Discipline	Increases in threat assessments are not associated with exclusionary discipline.		

Discussion

The present study focused on the threat assessment process in the K-12 environment in Virginia since the introduction of a threat assessment team mandate in 2013 and explored the association between the use of threat assessment and school safety outcomes. This project was the first to assess this association in tandem over time and the first to incorporate the views of K-12 threat assessment practitioners. To do so, this analysis employed a concurrent parallel mixed methods design with a pragmatic lens, addressing an important gap in the threat assessment, school safety, educational, and public policy fields. To address that gap, this study utilized a curated school safety database which combined several independent administrative data sources and executed eight multi-level models in the quantitative strand, results of which were compared to an analysis of nine focus groups of K-12 threat assessment team members which spanned the professional roles of school administration, school counseling, and school resource officer.

The first key finding from this study is that while the number of threat assessments increased across the study period (2013-2020), threat assessment practitioners identified numerous concerns regarding threat assessment training, lack of fidelity to the recommended process, and an overall inconsistency in the implementation of threat assessment and resource availability across the Commonwealth. A second key finding was that threat assessment practitioners consistently view school safety in a holistic capacity and consider threat assessment to be an enhancement to school safety (when it is implemented correctly). Increases in threat assessment were not found to be statistically associated with all aspects of school safety, as only physical security measures maintained a positive association with increases in threat assessment, while there was no association between threat assessment and school climate or exclusionary discipline. A third finding was that while many practitioners viewed power as evenly distributed among team members, it was apparent that in practice school administrators held the power in school, especially as it concerned threat

assessment operations. The following discussion details the mixed methods findings and contextualizes results in the threat assessment literature while discussing broader policy implications. Limitations to the current study are also discussed, as well as areas for future research.

Threat Assessment Utilization

Since the passage of the threat assessment mandate in 2013, there has been a statistically significant increase in threat assessment activity across middle and high schools in Virginia. Specifically, threat assessment in middle schools was found to have increased by a rate of 1.34 every year, while threat assessment in high schools increased at a similar rate of 1.36 every year. On average, middle schools in Virginia were performing 6.59 threat assessments annually in 2013 and 13.59 by 2019. Similarly, high schools in Virginia were performing 5.62 threat assessment on average in 2013 and 11.65 by 2020. The increase in threat assessment activity was not entirely surprising given the growth in attention paid to the topic over the past decade. As of 2019, 31 pieces of legislation concerning implementing threat assessment teams in K-12 public schools had been proposed across 19 states, with 28 of said bills being introduced since 2017 (Smith & Cleary, in preparation). Additionally, as of 2017, 39 states provided some form of clear online resources on developing and/or implementing a school-based threat assessment team (Woitaszewski et al., 2017). For the 2017-2018 school year, 43.7% of public schools across the United States reported having some version of a threat assessment team in their school (National Center for Education Statistics, 2019). The number of schools throughout the country using threat assessment has only grown since then, due in part to availability of federal funding for threat assessment through the federal STOP School Violence Act of 2018 (Burnett et al., 2020). With this growth and support at the state and federal level, it is imperative to continue to study the implementation and impacts of threat assessment utilization in schools.

Inconsistencies in Threat Assessment Operations

While the current research confirms the use of threat assessments increased over the study period, it also delves into more detail about the implementation and utilization of threat assessment in K-12 public schools in Virginia. Through focus groups with threat assessment practitioners, it became apparent that while practitioners viewed threat assessment as a valuable and worthwhile tool to use in schools, there were significant concerns and inconsistencies with the implementation and day-to-day practice of threat assessment.

Defining Threat Assessment. Beginning with the perceived definition of threat assessment, most practitioners, regardless of role type, defined threat assessment in the context of investigating and evaluating threats when they arise. While those components are at the crux of threat assessment, the process is much more involved. Specifically, absent from much of the conversation around the definition of threat assessment was the concept of *follow-up*. In threat assessment practice, follow-up focuses on the triage and after action of not only the subject of the threat assessment but also on any identified targets of the threat. Failure to properly follow-up after a threat assessment could lead to further disciplinary issues or an escalation of the threatening behavior. This was the case in a recent school shooting in which the threat assessment team failed to issue any sort of follow-up after the threat assessment, ultimately leading to the subject of the threat assessment killing another classmate (Goodrum et al., 2018). A case study of legal depositions after the incident uncovered the school failed to monitor the implementation of threat assessment and as a result threat assessment was not being conducted with fidelity in accordance with threat assessment guidance and best practices (Goodrum et al., 2018). If threat assessment is not conceptualized in a holistic manner, considering *all* aspects of the threat assessment process, the process defaults to a simple investigation and evaluation loop, and becomes no different than regular disciplinary processes.

Fidelity to not only the threat assessment guidelines but also the conceptual threat assessment processes is important to ensure threat assessments achieve their intended goal – mitigating a threat and desisting the threatener from their pathway to violence, in the short and long term. To accomplish this, follow-up must be considered and implemented as a part of every threat assessment.

Threat Assessment Operations. An additional finding from the after-action report of the school active shooter incident, along with a lack of follow-up, was that the school also failed to follow basic threat assessment procedures. For instance, the threat assessment team only used an untrained school administrator and a minimally trained to conduct the schools' threat assessments (Goodrum et al., 2018). These findings were similar to those within the after-action report for the Marjory Stoneman Douglass school shooting which noted that despite being identified numerous times as a person of concern, staff were neither properly trained nor engaged in the threat assessment process, thus contributing to the death of students by the person of concern (MSD Public Safety Commission, 2020). Shortly after, Florida passed mandated threat assessment and training (among other items) legislation for K-12 schools. While actual instances of targeted violence in K-12 schools remain low (Nekvasil et al., 2015), what is concerning are the echoes of these failings taking place in middle and high schools across Virginia.

Repeatedly, threat assessment team members across role types cited inconsistencies in the formation and utilization of threat assessment teams in their schools. Specifically, members reported that the entire threat assessment team does not usually complete the assessments and it is often only the school counselor and school administrator, or in one case just the school counselor. Several practitioners noted school resource officers being excluded from the threat assessment process, while others reported only involving the SRO when the threat was already classified as

high-level or serious. Other practitioners noted that staff at their respective school divisions were the ones to conduct threat assessments, and the school-level administrators acted simply as 'fact-finders' and funneled information to those at the division level. Perhaps the most demonstrative of the inconsistencies in threat assessment operations came with several school administrators reporting that threat assessments were performed by "who is available at the time", neglecting the multi-disciplinary guidance inherent in the threat assessment process.

This is concerning on numerous fronts. Threat assessment is designed and built upon the idea of using multi-disciplinary teams to assess, triage, and follow-up upon threats within schools. This study demonstrated that threat assessments have been increasing year after year, a finding that underscores the necessity that this growing tool be conducted correctly, with all available resources. Per Virginia code, and all threat assessment guidance, teams are to be made up of members with expertise in administration, counseling, and law enforcement (Virginia Department of Criminal Justice Services, 2017). Each member brings different knowledge and experience to the team (Modzeleski & Randazzo, 2018). Without the presence of the full team, members may be lacking key information that can provide much needed context to the threat assessment (O'Toole, 1999; US Secret Service, 2004). For example, multiple school resource officers, and school administrators, noted the value members law enforcement contribute to the threat assessment team in the form of information sharing. Specifically, law enforcement representatives are often able to share community-based information (such as calls for service or arrest reports) on the targets' out-of-school life that may contribute to the threat assessment evaluation and follow-up plan.

Information Sharing. Regarding information sharing, several school administrators cited issues on their teams with those in school counselor roles who often refused to share information due to "ethical concerns" over student privacy. While this concern may be valid for counseling

professionals, it is counter to the threat assessment process which relies on information sharing to create a snapshot of the situation and collect contextual information to appropriately situate, classify, and mitigate the threat. Additionally, legislation has been passed in Virginia to provide for the sharing of student records for the purposes of conducting a threat assessment (Virginia Department of Criminal Justice Services, 2017). The 2016 bill from the Commonwealth of Virginia modified existing legislation to specifically allow threat assessment teams to access educational, criminal, and medical records. Records sharing provides teams with the most information to make appropriate recommendations and service provisions. This legislative update does provide statutory authority for the sharing of sensitive records, superseding FERPA or HIPAA concerns, often cited as areas of confusion for schools (Louvar Reeves & Brock, 2018).

The ability to share information between employees, schools, and agencies is critical for the contextual component of threat assessment. In threat assessments, threats are viewed as contextual, dynamic, and continuous (Borum et al., 1999). As such, gathering information from a variety of sources is crucial to understanding all aspects of the target of the assessment to enhance the ability to make an informed evaluation of the seriousness of the threat and develop an appropriate action and follow-up plan (Meloy et al., 2012). The ecological systems approach to threat assessment relies on the sharing of any relevant, available information to assess and triage, ultimately (and ideally) desisting the target off their pathway of violence (O'Toole, 2000). While it was concerning to hear of these inconsistencies, some participants noted an open and positive relationship on their team, in which all members, in various role types, shared information freely to achieve the ultimate goal – helping to keep students and the school community safe. Perhaps a portion of these inconsistencies can be explained by another concerning trend reported by threat assessment team members – a lack of adequate training on threat assessment.

Training. Similar to patterns across threat assessment operations within schools, was a tremendous amount of inconsistency in the type and intensity of threat assessment training. While several team members reported ideal training situations, including yearly refreshers, intensive table-top exercises, and team-based training, others noted a complete lack of training in their schools and within their school divisions. Even more concerning were reports that entire teams operating and assessing threats in schools had never received training on threat assessment at all. As demonstrated by this analysis, the use of threat assessment has grown exponentially in middle and high schools. As such, it is crucial that the assessments are being carried out by trained professionals.

Being able to recognize, evaluate, classify, and develop after action plans are all critical elements of the threat assessment process (Borum et al., 1999). Being properly trained in threat assessment can enhance practitioners' ability to ultimate mitigate a threat. Conducting threat assessments with no or limited training could hinder the ability to do so, especially since evidence exists that threat assessment training works. For example, Allen and colleagues (2008) found that a two-day threat assessment workshop for 350 school personnel increased threat assessment knowledge and the degree of accuracy in classification of threat assessment cases. Similarly, Cornell and colleagues (2011) found that three half-day workshops increased threat assessment knowledge for 142 personnel and improved their ability to distinguish between serious and non-serious threats. Most recently, Stohlman and colleagues (2020) found that regardless of role type, experience level, or demographics, a half-day threat assessment training demonstrated increased knowledge of threat assessment and classification accuracy in a sample of 4666 practitioners across 100 workshops. While these gains demonstrate the ability to learn about threat assessment, perhaps what school-based threat assessment teams need most is training on the threat assessment process and fidelity to threat assessment guidance.

Resources. In relation to training, an additional issue uncovered in threat assessment team focus groups was a lack of resources, especially in rural areas of the state. A recent study by Hall and colleagues (2020) found that while there are numerous free threat assessment resources online, training is mainly awareness based and lacks in providing information on implementation and interventions. In addition to the noted the need for threat assessment training in their schools, many practitioners cited the overall lack of resources as the crux of the challenges they faced surrounding threat assessment utilization. Specifically, several practitioners mentioned needing more staff (school counselors and school resource officers) to help create consistency and improve relationships, citing high turnover as in issue in providing follow-up and resources to students after they have been processed by the threat assessment team. As staff are performing more and more threat assessments each year, having sufficient staff coverage is crucial to cover the needed demand that threat assessment entails.

High turnover and the need for more resources are not uncommon in any public sector field, especially in light of "the great resigning" currently impacting the labor force (Klein, 2021). It increasingly seems that school personnel and law enforcement alike are being asked to do more with less and wear multiple hats in their job duties (Westervelt, 2021; Wilson, 2020). This challenge is particularly concerning in light of several practitioners highlighting a lack of fidelity to the threat assessment process and implementation guidelines. Threat assessment is in and of itself a detail-oriented process which requires high levels of information gathering, collaboration, and after-action planning (and a lot of paperwork according to several team members), all of which siphon time, energy, and mental capacity from an already overworked, stressed, and underpaid staff.

The issues enumerated by threat assessment team members highlight another larger issue – a lack of standardization throughout the Commonwealth. As highlighted previously, practitioners

were consistent in their inconsistency, stressing the broad differences in school divisions and law enforcement agencies throughout the Commonwealth. The lack of resources and standardization could be due to the fact that Virginia cities and counties have more economic disparity between them than any other state in the United States (Yancey, 2021). While one division represented the ideal training (in-house, team-based, multi-day), process (full team participation), and follow-up (resources) threat assessment procedures, others conveyed the opposite extreme – literally being the only school counselor in an entire division and solely responsible for conducting all threat assessment in the division with zero resources to devote to follow-ups for students. Due to the decentralized nature of many of our institutions, there is a lack of standardization across schools, leading to consistent inconsistency in threat assessment implementation, training, and overall resources in schools. Research on the ability of K-12 schools to appropriately implement evidence-based practices shows that Virginia schools are not alone in their inconsistency as only 44% of schools met the criteria for effective implementation of evidence-based practices (Gottfredson & Gottfredson, 2011). Future research is needed to explore the variance across the entire threat assessment process throughout Virginia.

Threat Assessment and School Safety

The current project also explored the association between threat assessment and school safety overall. In addition to increases in threat assessments by middle and high schools, threat assessment was also found to have mixed effects on school safety outcomes. Threat assessment practitioners consistently defined school safety as a combination of physical security and school climate. In terms of school safety, this analysis conceptualized school safety as an amalgam of physical security measures, school climate, and school discipline – which was mirrored in the selection of threat assessment team member role types (school resource officers, school counselors,

and school administrators, respectively). This study's quantitative approach of examining school safety in a holistic fashion, incorporating physical security, school climate, and school discipline triangulated with the holistic definition to school safety provided by focus group practitioners.

Physical Security

Physical security measures have increased over the study period in middle and high schools by a rate of 1.3 per year. This increase in large part was driven by the increases in school resource officers and school security officer in schools. Across the nation there has been an increase in the former since the advent of the SRO program in the 1950s, with marked increases since the late 1990s and the events of the Columbine High School shooting (Counts et al., 2018; Weistburst, 2019; Lawson et al., 2021). The present study found a statistically significant, positive association between the number of threat assessments performed annually and the number of physical security measures in schools. Specifically, that as the number of threat assessment increased, so too did the number of physical security measures within schools. This finding was consistent across middle and high schools. An interesting finding within the physical security models was that as physical security measures increased, so too did rates of school discipline. This could, however, be because SROs are often assigned to school with higher rates of violence and suspensions (Lawson et al., 2021). It is clear, however, that further research exploring the association between physical security, especially the presence and use of SROs, and threat assessment is needed.

Throughout the focus groups with threat assessment practitioners, the relationship between school administrators and SROs seemed inconsistent. While some school administrators reported relying heavily on their SRO for support, information, and student follow-up, others reported being apprehensive about calling in the SRO for fear of due to wanting to be "culturally aware" or only utilizing the SRO as when threats were classified as serious.. Similar inconsistencies were reported

by SROs, with one reporting that in their division SROs cover multiple schools and are unable to develop relationships in schools, even to the point that some school administrators will hide information from the SRO, ultimately limiting the resources and services that students can receive. Conversely, another SROs reported have a "tight" relationship within their school and being involved in every threat assessment fully. Even more drastic, one SRO described their school administrator as an "over-sharer" and detailed scenarios in which the school made "a mountain out of a molehill" and the SRO had to explain why a student should not be arrested, but instead be referred to counseling services. It seems that schools, like the rest of the United States, are grappling with a diverse view of the use of law enforcement in schools, including whether to continue having SROs in schools at all (King & Schindler, 2021), despite the support among school staff, parents, and students to keep SROs in schools (Cornell et al., 2021; Fletcher, 2021; Pauly, 2021). These inconsistencies again highlight the need for further research on the association between the use of law enforcement in schools and threat assessment.

Lastly, as it concerns physical security measures, an interesting finding was the physical security measures were not associated with school climate. This is potentially a fascinating finding in light of prior research. In a 2016 systematic review, Reingle Gonzalez and colleagues found that across 32 studies, increases in security measures, particularly SROs, were associated with increases in student and staff perception of safety within their schools. In contrast, other studies demonstrated a decline in objective measures of safety just as rates of victimization and exclusionary discipline (Reingle Gonzalez et al., 2016). This could again, however, be indicative of the fact that physical security measures are more likely to be found in schools with higher behavioral, crime, and other safety-related issues (Fisher et al., 2020). In Virginia, school climate surveys consistently indicate that students and staff feel safer with an SRO in school (Cornell et al., 2021), even as some

divisions have eliminated or are considering eliminating SROs in their schools (Domen, 2021). Ultimately, this inconsistency has led to an interesting school policy crossroads, especially in light of threat assessment. Given the mandate to include a team member with expertise in law enforcement, and guidance to include law enforcement on multi-disciplinary threat assessment teams, and after-action reports citing failures to operate threat assessment teams in the recommended fashion, if schools choose to end partnerships with SROs, schools must grapple with how exactly the mandate will be fulfilled. Schools should consider the potential ethical, legal, and safety ramifications of failing to adhere to threat assessment guidelines, especially in the worst-case scenario of targeted violence on school grounds. With this consideration in mind, future research is recommended to explore the association between threat assessment, school climate, and physical security in more depth.

Threat Assessment & School Climate

Another school safety outcome examined in this analysis was school climate. For this project, school climate was conceptualized as students' perception of safety. The inclusion of school climate as a part of school safety was supported; middle schools reported a high and consistent rating of agreement with the statement "I feel safe at this school" (4 out of 5), while feelings of safety have been declining in high schools by a small margin each year (.06). Within the school climate model, threat assessment and school climate were found to not be associated, failing to provide support a hypothesis within the study. Prior research found that schools using threat assessment procedures developed by researchers from the University of Virginia were associated with increases in school climate as compared to other threat assessment procedures (Nekvasil & Cornell, 2015; Cornell, 2013; Cornell et al., 2012; Cornell et al., 2009).

School climate was, however, associated with exclusionary discipline practices, though the direction of the association was mixed. For example, in middle schools, increases in school climate were associated with increases in rates of exclusionary discipline at the division level (by a rate of 1.56) but a decrease in rates of exclusionary discipline at the school level (by a rate of -1.81), these patterns were similar among high schools (with rates of 1.0 and -1.02, respectively). This could indicate that some schools might operate independently of their division, or that there is a greater variation within a division in school disciplinary practices. In contrast, divisions may exercise more control over the schools within their division, resulting in similar disciplinary practices and school climate, resulting in less variation within the division. . Although outside the school of this study, studies on school climate are vast and future research should continue to explore this connection in more depth, especially in the light of a growing movement towards alternatives to suspension (Owen et al., 2015).

Threat Assessment & School Discipline

Although not traditionally considered an aspect of school safety, discipline practices have often been used as a proxy for school-based violence and a measure for overall school safety. Over the study period, this analysis found that both middle schools and high schools have experienced a small, but statistically significant decline in rates of exclusionary discipline in schools each year (-.12 and -.01, respectively). While small, this decline is consistent with overall trends in schools to reduce the number of suspensions and expulsions in light of reports on disproportionate suspension practices and awareness of the school-to-prison pipeline (APA, 2020). Disciplinary outcomes have also featured at the core of much of the existing literature on threat assessment. Despite this analysis finding no support for an association between rates of exclusionary discipline and the number of

threat assessments, this appears to be an anomaly among threat assessment research, but in actuality it may be more complicated.

Numerous studies have shown that threat assessment is linked with lower rates of lower rates of exclusionary discipline for students (Cornell et al., 2009; 2011; 2012; Cornell & Lovegrove, 2015; Maeng et al., 2020; Nekvasil & Cornell, 2015); however, the findings are not for threat assessment at large, but for schools using a particular threat assessment model – one developed by researchers from the University of Virginia. The Comprehensive School Threat Assessment Guidelines, or CSTAG, (Cornell, 2018), formerly known as the Virginia School Threat Assessment Guideline or the Virginia Model, differ from the guidelines created for and promoted by the Virginia Department of Criminal Justice Services, mainly in the classification of threats by the threat assessment team. As such, it is an important clarification to note within the threat assessment literature, that the use of this particular model (CSTAG) is associated with lower rates of exclusionary discipline, among other outcomes, and that these are not outcomes for threat assessment at large. The CSTAG model was recognized as an evidence-based practice by the National Registry of Evidence-based Programs and Practices (NREPP) of the U.S. Department of Health and Human Services in 2013, marking an important advance in the threat assessment field. However, more research is needed on the broad effects of threat assessment on discipline, not only the effects of a certain model, as this analysis found no such support.

While threat assessment practitioners consistently view school safety in a holistic capacity and view threat assessment as an enhancement to school safety (when it is implemented correctly), threat assessment was not found to be associated with all aspects of school safety. Increases in threat assessment were only found to be associated with one aspect of school safety - physical security measures. Ultimately, this study found no support for the association of threat assessment

and other school safety measures like school climate or exclusionary discipline. This was a particularly interesting finding in light of so many practitioners defining school safety in a holistic fashion, including both physical security and school climate. School administrators also consistently thought of school safety in terms of preparedness and administrative policies and procedures, which highlights the expansive view of school safety. What is perhaps more telling, and could possibly provide insight to the siloed nature of this study's findings that threat assessment is only associated with physical security measures, was that in identifying threats to school safety practitioners often cited threats to physical security—particularly school violence. Across all role types, *external-to-internal* threats were the most commonly identified type of threat; almost all examples of school violence manifested inside the school. For example, participants shared stories of arguments or feuds originating on social media and coming to a head violently at school, including gang violence, bullying, or simple schoolyard fights. Accordingly, while practitioners see school safety as an inclusive concept, many view threats to school safety only in the physical security paradigm, potentially explaining the lack of statistically association between threat assessment and other aspects of school safety. Consequently, it seems the association between threat assessment and school safety mirror conditions in threat assessment implementation – consistently inconsistent.

Threat Assessment Team Dynamics

Despite identified concerns in the implementation and operations of threat assessment, this study uncovered positive perceptions of threat assessment as well, particularly as it relates to the threat assessment team and threat assessment efficacy. While this study confirmed that the use of threat assessment is increasing among public middle and high schools in Virginia, it also exposed positive views of the threat assessment in general and an overwhelmingly positive view of threat assessment teams in schools.

Examining perceptions of team dynamics by role type, this study found that unlike their thoughts on threat assessment processes, school counselors overwhelmingly described threat assessment team dynamics in a positive light as compared to other role types, like school administrators and school resource officers. One school counselor claimed that "we have the greatest team," which was a common sentiment among school counselors as one reported that "everyone has a common goal and the work is important," with another counselor agreeing, "we're all on the same page and work well together." School administrators were more diverse in their views of team dynamics with some simply noting that "all members come to the table with info and has the opportunity to be heard, their voices have value – it helps in sharing info so everyone understands the context" while others lamented the challenges with information sharing among members and infighting among administrators. Views on team dynamics were similarly split among school resource officers, but again trended toward positive, with one noting "the team dynamic is crucial because we all wear different hats and bring different expertise and feedback." Understanding these perceptions is essential to future threat assessment and school safety policy. While practitioners had concerns and suggestions about the threat assessment process and implementation fidelity, these positive perceptions demonstrate that practitioners from different role types, with their differing biases, can work together successfully towards a common goal. One wonders if the process of engaging multi-disciplinary team members to gather and examine contextual information could be extended to other school-based processes, like alternatives to suspension. Perhaps by uncovering more information about the conditions in which discipline or criminal violations occur, instead of simply punishing the violator, services can be rendered to best mitigate and address the underlying conditions of the offense, as is completed by the threat assessment process.

One additional interesting finding concerning views of team dynamics, although not entirely surprising, was the pattern that emerge in regard to threat assessment activity levels. Specifically, all *negative* views of threat assessment team dynamics clustered within the no activity groupings, meaning that practitioners from schools that did not perform threat assessments were the only ones to view team dynamics in a negative light. This could be due to a lack of training or lack of resources, however, what is clear is that schools who are not actively engaging in the threat assessment process are not experiencing the beneficial impacts of the process itself – building positive, multidisciplinary relationships to mitigate threats to the school community.

Power Differentials

To better understand threat assessment team dynamics, this study also investigated power differentials among threat assessment team members. While there was variation across school roles in how practitioners *viewed* power distributions within threat assessment teams, it was clear through analyzing the totality of the focus group transcripts that school administrators ultimately hold the power in schools, especially concerning threat assessment teams. Consistently, practitioners detailed how school administrators decided who served on the threat assessment team and how many members the team would have. Additionally, school administration seemed to be the arbiter of the involvement of school resource officers as several administrators and school resource officers detailed the level of their involvement on the threat assessment team was dependent upon their relationships with the school administrator. While several administrators believed their teams to be harmonious, and ultimately came to a consensus on threat assessment decisions, it was clear the administrators believed they ultimately had the final say in the decisions of the threat assessment team. This finding underscores the tremendous power held by school administrators. By selecting threat assessment team members, deciding which cases come to the threat assessment team, and

being the final voice in the process, the school administrator can choose to have an active, fully trained, multi-disciplinary threat assessment team, or an inactive, untrained, team of one or two that assesses threats at the whim of the administrator. Understanding the power inherent in the role of the school administrator underscores the need for appropriate training and resources at the school-level.

In addition to the concentrated power of the school administrator, this analysis also uncovered that some power over threat assessment is vested at the division level. Several practitioners noted that staff at the division-level dictates most threat assessment policy and procedures, to include training schedules, resource allocation, and team composition. As one participant noted, "Central Office are the real gatekeepers, any disagreements go to Central Office and they can order a threat assessment to be redone if it is done incorrectly," while another relayed that at the school level they were merely fact finders and that staff at the division-level conducted all of the threat assessments. This finding again highlights the broader theme of inconsistencies in schools across the Commonwealth and mirrors results in the quantitative strand, where school climate had the opposite association with school discipline. Specifically, at the division level, decreased in rates of exclusionary discipline were associated with increases in school climate, but at the school level decreases in discipline were associated with increases in school climate. The unstandardized nature of schools and school divisions across the Commonwealth could explain these differences, as some divisions exercise great control over the policies and procedures of their schools while other divisions provide more autonomy to their schools. Threat assessment and other school safety practices may be an area in which, from division to division, the level of oversight changes and thus patterns are inconsistent. Future research should examine division level oversight more closely to determine who truly holds the power.

Threat Assessment Efficacy

To close out each focus group, participants were asked to whether they believed threat assessment enhanced or affected school safety. Responses here were overwhelmingly positive. Practitioners responded that using threat assessment "gets kids the services they haven't had, services they desperately need, it is incredibly helpful to catch kids that would have slipped through the cracks" and that "it can alert more people to an issue and kids get more resources – it triggers a system to fix things." More broadly some saw threat assessment as a benefit as "it opens lines of communication and acknowledges a threat and addresses it before it gets worse," and that it is "definitely effective – it makes us more aware and more confident" and "just having knowledge that you dove in and offered assistance, analyzed the situation, and mitigated a threat – I don't know what we did in the past, but I couldn't imagine doing this job without threat assessment, it gets positive conclusions." The glowing endorsements continued with one practitioner noting "numerous cases are easy to deescalate the potential for violence because of interventions, conversations, and engagement – it enhances school safety" and "school is definitely a safer place for having it because there's situations that have come through that we've been able to mitigate because of the process – definitely worthwhile."

Even though perspectives were substantially positive, some practitioners hedged their positive impressions with real concerns, such as "big picture, it would be better if we had more resources to be proactive rather than reactive – it is important and helpful though" and it is "excellent if used properly – we skip over so much – we don't even do it correctly." These unique findings again underscore the team of inconsistency as it pertains to threat assessment. While it seems apparent that practitioners value threat assessment and view it as an enhancement to school

safety, major concerns exist that even color their overall evaluation of threat assessment and its effect on school safety.

Limitations

This analysis employed a concurrent, parallel mixed methods design in an attempt to triangulate several sources of school level secondary data with focus groups of threat assessment practitioners. The merging of each data source aimed to provide a holistic, detailed picture of the threat assessment process and associations with school safety overtime. While this analysis achieved this goal, and addressed several gaps in the literature, it was not without certain limitations.

In the quantitative strand, this study was not an experimental design, and findings are merely an examination of the association between the independent and dependent variables, and should not be interpreted as causal (Johnson, 2001). However, by using a longitudinal assessment, conclusions drawn were strengthened as longitudinal analyses can be more precise by eliminating interindividual variability (Cook & Ware, 1983). Although the use of a longitudinal design provided substantial benefit in the identification of patterns over time, by relying on secondary data, the research was limited in data sources that were measured consistently over time. From year to year, questions in certain data sources (the School Safety Audit Survey and School Climate Survey) change. For example, in the most recent School Safety Audit Survey, principals were asked about threat assessment team training, team composition, and records retention within their schools. Utilizing this data in a cross-sectional analysis could expand more upon findings from the qualitative portion. These data, however, were not consistently measured overtime and therefore could not be considered for a longitudinal assessment.

Additionally, while existing models do include several covariates, there is always the chance of missing confounding variables. For example, school or division funding may factor into

how active a school's threat assessment team might operate due to budgetary restrictions or overstretched resources. If a measure of school funding was included, it would be possible to examine the effect of funding on the various school safety outcomes. An additional variable that would be helpful to consider would be a measure of crime within the community surrounding the school. The addition of this variable could determine similarities or associations in threat assessments, school climate, and school discipline as a condition of neighborhood crime. As was discussed previously, practitioners identified inconsistencies in resources. Similarly, the lack of standardization across schools and divisions may have contributed to the availability of alternatives to suspension, or other school or division policies might affect the disciplinary outcomes or school climate.

Lastly, as school safety has been a somewhat nebulous topic in the literature (Mayer & Furlong, 1999), there were potential threats to internal validity. By using three different outcome variables to represent school safety - a physical measure, a climate measure, and a disciplinary measure, my hope was for this analysis to expand the definitions of school safety to be more than simply a proxy for school violence (Mayer & Furlong, 2010). Also, using a count for threat assessment and physical security could possibly have hindered the analysis. Perhaps using a rate per student, per school may have elicited different results, as a rate would take into consideration the total number of students within a school and standardize the measure. By changing the variable, there could be a clearer relationship established, or not at all, between threat assessment and physical security measures. Ultimately, the merging of these findings with findings from the qualitative strand may strengthen the overall internal validity and be useful to contradict divergent findings. Concerning external validity, this study was based on a subpopulation of Virginia schools, and there remains a question regarding the generalizability of the findings. As Virginia was the first

state to mandate threat assessment teams for K-12 schools, it remains a unique environment to implement a growth model by having 5+ years of consistent data regarding threat assessment teams. Although schools vary from state to state, findings from this analysis may inform future threat assessment practices, especially when coupled with findings from the qualitative strand.

In qualitative, and subsequently mixed methods, analyses, the term *validity* remains controversial as some scholars view the construct as a "debunked modernist perspective that champions universal rationality, rules, order, logic, and the like" (Onwuegbuzie, Johnson & Collins, 2011, p. 55). In lieu of validity, this analysis characterizes threats to validity as legitimation - a quality assurance measure that assesses the inferences made and methods used (Onwuegbuzie, Johnson, & Collins, 2011). The first challenge to legitimation were procedural concerns through researcher bias. As a former state employee, and advocate/instructor for threat assessment practices, I recognize I may present biases acting as lead moderator, coder, and even in the question design portion. To minimize the influence of these biases, I asked several committee members to review my focus group questions. I was also cognizant of the issue of researcher bias in the analysis phase. In the qualitative strand, I listened to and coded every focus group. This group-by-group transcription provided an opportunity for memoing and bracketing – as a reflection activity and to reduce any researcher biases (Benaquisto, 2008). This process also allowed for the familiarization with the data prior to final coding. As a doctoral candidate, I routinely consulted with my chair and invited their oversight in transcribing, coding, and analysis. Another challenge appeared within the focus groups, as a moderator, I was often unable to drill down or circle back to certain topics due the conversational flow within the focus groups itself. Perhaps interviews may have elicited a greater depth on some of the topics. Lastly, the analysis of qualitative data was situated in a

positivist, content analysis framework. Undertaking a post-positivist approach, analyzing focus groups for themes and deeper meaning may uncover richer findings.

As this analysis employed a hybrid method of coding, additional legitimation concerns were quelled by following the three-phase procedure outlined by Swain (2018) in an effort to provide a trail of evidence to increase credible findings through a systematic process. Using both *a priori* and *posteriori* coding allowed for a deeper search for meaning the two sets of codes are applied (Swain, 2018). Ultimately, by providing a unique perspective on threat assessment, this data was complementary to findings from the quantitative strand.

Future Research

As previously highlighted, findings from this study address several gaps in the literature and provide unique insight into the perspectives of several types of practitioners as it relates to school safety and threat assessment. These findings are important and create a space and need for future research.

- **Fidelity.** One of the chief complaints from threat assessment practitioners was that their schools were not implementing or conducting threat assessment in accordance with best practices and model guidelines. A closer examination of threat assessment operations within a school or school division (or all of them) is needed to better understand barriers to implementation fidelity.
- **Needs Assessments**. In line with the prior recommendation, practitioners identified several crucial areas for improvement, chief among them being training and resources. A needs assessment of all public schools in the Commonwealth could help clarify what is needed at the school and division level, and where. Specifically, where and what resources could be filtered based on identified needs across schools.

- **School Safety Outcomes**. Future research is also needed to expand and confirm prior research on threat assessment, expanding research to investigate apparent differences in outcomes based on the type of threat assessment model being used in schools. The present study uncovered that several findings from prior threat assessment research (Cornell et al., 2017; Cornell et al., 2018) could not be extended beyond one model of threat assessment. There are several questions that emerge from this discordance – is the CSTAG model just better or are there questions regarding implementation fidelity that delegitimate the prior findings. **Post-positivist analysis.** The qualitative portion of this analysis operated within a content analysis framework, focusing on a manifest, literal interpretation of the focus groups. Future research should consider a post-positivist, latent, interpretive assessment of the data, uncovering themes which might help better understand the perspectives of threat assessment practitioners.
- **Threat assessment nationally**. This assessment focused exclusively on public schools in Virginia. Now that more states are implementing and mandating threat assessment in schools, many of which require a reporting mandate (Smith & Cleary, in preparation), it would be important to understand and compare the implementation of and experiences with threat assessment in other states.

Policy Implications

The present study focused on the threat assessment process in the K-12 environment in Virginia since the introduction of a threat assessment team mandate in 2013 and explored the association between the use of threat assessment and school safety outcomes. This project was the first to assess this association in tandem over time and the first to incorporate the views of K-12

threat assessment practitioners. Mixing of methods here illuminated several areas in need of attention regarding policy directives.

- **More and better training.** While the number of threat assessments have increased, practitioners identified numerous concerns regarding the implementation and utilization of threat assessment. Particularly, threat assessment team members need more training and more intensive team-based training in which the entire threat assessment team trains together. Numerous practitioners cited this need as a chief concern. More training can also address process complaints from threat assessment team members regarding issues such as conducting threat assessments with all team members, completing the entire recommended process, and committing to follow-up after the threat assessment.
- **More resources.** Another chief concern among practitioners was the struggle with needed resources. There seemed to be a great deal of variation and inconsistency across school divisions. Practitioners consistently cited a lack of staff, chiefly school resource officers and school counselors, which put pressure on exiting staff, potentially letting valid threats (and students) fall through the cracks. Of course, increases in staffing comes with associated financial costs. However, with an over $2 billion dollar school security industry (Woodrow-Cox & Rich, 2018) promoting advanced locks, bulletproof backpacks, and social media monitoring that are being marketed to schools, perhaps those dollars could be better spent on more personnel to cover the needs of students and schools. After-action reports from instances of targeted violence in schools never seem to point to more locks, surveillance, or gadgets as the recommendations for improvement, but instead focus on enhanced training, and staff resources as solutions (Goodrum et al., 2018). Grant funding for localities to implement threat assessment should also be considered. Funding allocations could also have

the additional benefit of oversight from threat assessment experts at the state level, ultimately ensuring fidelity to the threat assessment model.

- **Oversight.** Given the consistent inconsistencies cited by not only threat assessment practitioners, but also found in the quantitative data, implementation oversight could be useful to maintain fidelity to the threat assessment model. While this may more easily achieved through conditions placed upon grant funding, as refenced above, creating a certification or monitoring process may be more beneficial to promote equity and consistency across the Commonwealth. An oversight mechanism could mirror existing state-level oversight, like in the Departments of Juvenile Justice or Criminal Justice Services. As an example, regional law enforcement training academies are required to be certified and recertified by the Department of Criminal Justice Services (DCJS), who monitor, investigate, and evaluate academies based on identified regulations and procedures[17]. Threat assessment programs in schools could undergo similar certification processes, whereas evaluators at DCJS could ensure that threat assessment team members attend training and are implementing the process with fidelity. This type of oversight could promote fidelity to the threat assessment model, thereby promoting school safety and minimizing the risk of a targeted violence incident in Virginia schools.

Conclusion

Threat assessment is a growing approach to school safety that is supported by threat assessment practitioners, with caveats. Fidelity to the model is needed to ensure the goal of threat assessment is being achieved – identifying, evaluating, classifying, and mitigating threats to the school community to keep students and staff safe. The present study focused on the threat

[17] See https://www.dcjs.virginia.gov/law-enforcement/programs/field-services.

assessment process in the K-12 environment in Virginia and is the first to examine the association between threat assessment and school safety in tandem over time and the first to incorporate the views of K-12 threat assessment practitioners. Findings from this study demonstrate that while the number of threat assessments has increased across the study period (2013-2020), threat assessment practitioners identified numerous concerns regarding threat assessment training, expressed doubts about fidelity to the recommended process, and revealed an overall inconsistency in the implementation of threat assessment and resource availability across the Commonwealth. Additionally, threat assessment practitioners consistently viewed school safety in a holistic capacity and consider threat assessment to be an enhancement to school safety (when it is implemented correctly). Increases in threat assessment were not found to be statistically associated with all aspects of school safety, as only physical security measures maintained a positive association with increases in threat assessment, while there was no association between threat assessment and school climate or exclusionary discipline. Ultimately, threat assessment proves to be a valuable tool to enhance school safety, but further research is needed to understand this connection in more depth. Supports and resources for schools and divisions across the Commonwealth are also needed to ensure that threat assessment is implemented and practiced with fidelity, thereby helping to minimize the risk of targeted violence in schools.

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Appendix A: Focus Group Guide

Focus Group Guide	

Introductions	- Moderator, Co-Moderator introductions
	- Overview of topic (threat assessment teams and school safety) and purpose of research
	- Overview of guidelines
	  - Reminder to not use names of staff, students, schools, or administration.
	  - Reminder that session will be recorded, but recordings will be destroyed once transcriptions are completed.
	- Request to record
	- Prompt to pre-Covid conditions

School Safety	- How would you define school safety? - In your opinion, what are the most important school safety concerns? - Please describe the climate of your school. How do students and staff describe their experiences of safety at your school?
Threat Assessment	- What does threat assessment mean to you, in your profession? - Please describe any training you received on threat assessment. - Please share your thoughts on the threat assessment process, as a whole?

Threat Assessment Teams	- Can you tell me about how threat assessment teams are formed in your school?
	  - Prompt for elaboration - length of service, selection of members.
	- Describe the experience of training together with your team.
	  - Prompt for elaboration - formal meetings, formal training.
	- Please share an experience when your team worked well together.
	- Please share an experience when your team didn't work well together.
	- How could the experience of working in a team improve?
	- Has your team ever disagreed about a case?
	- How is the final determination made?

	- Could you explain how power is distributed within the team? How are disagreements handled?
Threat Assessment	- How does your division/school support threat assessment? - What changes would you recommend to the threat assessment process? - In what ways is threat assessment effective? Explain what effective means to you?
School Safety	- How do you think threat assessment enhances overall school safety? Explain. - Think back earlier to how you defined school safety – How is your school safer because of your threat assessment team?
Conclusions	- Confidentiality reminder - Contact information - Field any questions - Dismissal