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## The Impact of Opioids on Students and Schools in Appalachian and Non-Appalachian Ohio: Educational Leader Perspectives on the Crisis

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## The Impact of Opioids on Students and Schools in Appalachian and Non-Appalachian Ohio: Educational Leader Perspectives on the Crisis

### About the Author(s)

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### Keywords

Appalachia, educator perception, high-needs school, opioid crisis, rural education



## **The Impact of Opioids on Students and Schools in Appalachian and Non-Appalachian Ohio: Educational Leader Perspectives on the Crisis**

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### **Abstract**

Over the last several decades, the opioid crisis has had an increasing impact on the educational environment of schools. The role that principals and superintendents have in leading schools that have been affected by opioids has been mostly overlooked in the research. The present study was conducted in Ohio, a state with areas that have some of the highest death rates due to opioid-related incidents in the nation. **Purpose:** This study collected data on the perspectives and perceptions of school leaders in Ohio to better understand how principals and superintendents frame their decisions regarding the opioid crisis. **Design:** We analyze data collected from a survey of 217 Ohio school leaders ( $n = 164$  principals and  $n = 53$  superintendents). The survey required principals and superintendents to rate their perception of the opioid crisis in their schools based on their socioeconomic status, school typology as rural or non-rural, and school location within or outside the Appalachian region. **Results:** Findings emphasize that opioids remain a factor negatively impacting schools of varying typologies, economic levels, and geographical locations.

*Keywords:* Appalachia, educator perception, high-needs school, opioid crisis, rural education

### **Introduction**

Although overshadowed by the COVID-19 pandemic, opioids continued to be a major concern in the United States between 2019 and 2022 (American Medical Association, 2022; Centers for Disease Control and Prevention [CDC], 2021; Green et al., 2020). In 2020, incidents of overdose deaths from opioids continued to rise throughout the nation (Alexander et al., 2020; Chandler et al., 2020). As of 2021, the U.S. was experiencing more than 100,000 drug overdose deaths annually. Opioids accounted for 75,673, over three-fourths, of these deaths in that same year (CDC, 2021). Although all states in the U.S. have seen the effects of opioids, some states, such as West Virginia, Maryland, New Hampshire, Delaware, and Ohio, have been cited as

states with severe opioid problems. Ohio has stood out consistently in the top five, with more than 27.8 opioid-involved overdose deaths per 100,000 people (National Institute on Drug Abuse, 2021; Newman, 2019). According to the most recent data from the Ohio Department of Health (2019), opioids account for 83.7% of all unintentional drug overdose deaths in the state. The demographic most likely to die from opioids in Ohio are those within the ranges of 25-34, 35-44, and 45-54 years of age—those individuals most likely to have school-age children.

An increasing number of students in K12 schools are being impacted both directly and indirectly by the opioid epidemic (Bullinger & Wing, 2019; Welby, 2019a). The adverse effects on children may range from neurodevelopment and cognitive issues to trauma from abuse or abandonment, as well as toxic stress response syndrome (Darolia & Tyler, 2020; Romanowicz et al., 2019; Welby, 2019a). As a result, the educational outcomes for students exposed to opioids are suffering (Darolia & Tyler, 2020; Ellis et al., 2020; Vazquez-Martinez, 2020). Darolia and Tyler (2020) reported that although the opioid epidemic did not singularly influence the academic performance of students, their data indicated that a given level of the opioid epidemic could influence the test scores of students in distinct school communities with high incident rates. According to this report, the consequences for rural areas may be especially concerning.

Considering the scope of the impact of opioids on school-age children, the decision-making, problem-solving, and resource allocation in leadership practice as efforts to respond to the epidemic become essential factors for the leaders of their schools and districts (Teasley, 2018; Welby, 2019a, 2019b). The influence of the educational leader on school culture and climate, and because of the perspectives and attitudes of others, is well established (Grissom et al., 2021; Turan & Bektas, 2013; Wang, 2021). However, to what degree do the perspectives and perceptions of the leaders themselves influence their methods and measures of prioritizing responses and resources to counter issues in their schools and communities, such as with opioids? We hold that the school leaders' perception of the impact that opioids have on their schools and the perspectives that they use to frame their responses are critical to understanding effective practices (DeMatthews et al., 2021; Ejimabo, 2015; Pascotto, 2018; Raelin, 2011; Silins et al., 2002).

Therefore, this study used a 17-item researcher-developed Likert-type survey to investigate leader perspectives and perceptions to answer the following questions:

**Research Question 1:** How do Ohio superintendents and principals perceive the impact of opioids on schools and students?

**H<sub>1</sub>** Superintendents and principals will have significant differences in their perception of the impact of opioids on schools and students.

**Research Question 2:** Does school typology, such as rural versus non-rural, influence the perceptions of school leaders regarding the impact of opioids in Ohio?

**H<sub>2</sub>** Rural school leaders and leaders of suburban and urban schools in Ohio will have significant differences in their perception of the impact of opioids on schools and students.

**Research Question 3:** Is there a difference in the perception of school leaders regarding the impact of opioids based on regional location, Appalachian Ohio or non-Appalachian Ohio?

**H<sub>3</sub>** Non-Appalachian school leaders and leaders of schools in Appalachian will have significant differences in their perception of the impact of opioids on schools and students.

**Research Question 4:** Does the socioeconomic status or high-need condition of the school influence leaders' perceptions of the impact of opioids on schools and students in Ohio?

**H<sub>4</sub>** A significant difference in perceptions of school leaders at schools classified as lower socioeconomic status (i.e., low high-needs and high high-needs).

To frame this study and these questions, we review the literature on school leadership (i.e., superintendents and principals), school typology (rural vs. non-rural), regional location (Appalachian vs. non-Appalachian), and the classifications of schools as high-need (or socioeconomic status). In addition, we analyze results based on the role of the educational leader (superintendent vs. principal).

### **High-Need Schools**

High-need schools are legally defined by the "percentage of students from low-income families enrolled" (20 U.S. Code § 1021). Criteria in the United States include the following: the percentage of students aged 5 through 17 in poverty counted in the most recent census data, the percentage of students eligible for free or reduced-price school lunch, and the percentage of

students eligible to receive medical assistance under the Medicaid program [20 USC § 1021(11)(A)]. A high-need elementary school is where at least 60% of the students are "eligible for a free or reduced-price school lunch under the Richard B. Russell National School Lunch Act" (42 USCS §§ 1751 et seq.). For any non-elementary school, a high-need school "serves students not less than 45 percent of whom are eligible for a free or reduced-price school lunch under the Richard B. Russell National School Lunch Act" (42 USCS §§ 1751 et seq.). Relatedly, there is evidence that socioeconomic status correlates to prescription opioid use behaviors (Nicholson, 2020) and opioid-related overdose (van Draanen et al., 2020).

### **Rural Schools and Communities**

Additionally, there exists a need to place increased attention on rural education (Lawrence-Bourne et al., 2020; Shiels et al., 2019; Sher, 2019; Showalter et al., 2017). As Teasley (2018) articulated, "From a public health perspective, one of the most urgent needs deserving acute focus by school systems and related services personnel is the present-day national opioid crisis and its effects on school-age children and youth" (p. 195). Teasley went on to affirm, "schools are the most influential institutions in the country in terms of socializing and shaping the behavior of youths (Hoagwood & Johnson, 2003)" (p. 196). Similarly, Hartman et al. (2022) have that rural schools often "face educational challenges that are the result of forces beyond the community's direct control - forcing them to adapt and be resilient or flounder - and those that are the cause of community-level struggles for control over educational resources and outcomes" (p. 60).

The opioid crisis is often characterized as a rural problem (Burfoot-Rochford, 2020; Burfoot-Rochford & Schafft, 2021; Cochran et al., 2017; Harder et al., 2021; Hazlett, 2018; Palombi et al., 2018; Sigmon, 2014). According to Burfoot-Rochford and Schafft (2021), a strong correlation exists between high rates of opioid-related deaths and distressed regions marked by economic underdevelopment and change. These communities tend to be geographically remote or rural areas and are traditionally associated with energy extraction industries or a jobs market heavily dependent on physical labor (Case & Deaton, 2020; Monnat, 2018; Monnat & Rigg, 2018). With this framing in mind, it is necessary to consider rural communities as sites in which schools struggling from the impact of opioids are situated.

Palombi et al. (2018) and Harder et al. (2021) have asserted that the opioid epidemic has presented yet another “wicked problem” impacting community resilience and educational capacity in rural communities. From the standpoint of opioid abuse as a health problem, scholarship consistently found higher occurrences of serious opiate abuse problems in rural populations (Harder et al., 2021; Palombi et al., 2018). Harder’s team (2021) found that primary care practitioners (PCP) in rural Vermont “reported higher mean levels of concern for their patients’ use of heroin by 1.38 points, fentanyl by 1.52 points, and methamphetamine by 1.61 points, than non-rural PCPs” (p. 3). Similarly, Palombi’s systematic review also noted that “rural and Appalachian counties experienced an increase per 1000 births in neonatal abstinence syndrome (NAS) that was 2-2.5 times higher than urban/non-Appalachian counties, with a greater number of NAS births overall in Appalachian counties” (p. 649).

### **Context of the Study: Ohio**

Ohio has been labeled as "ground zero" for the opioid crisis (Brett et al., 2023; The Ohio State University College of Food, Agricultural, and Environmental Sciences, 2022). In a recent study by Hall et al. (2020), it was reported that Ohioans accounted for over half a million Years of Life Lost due to fatal opioid overdoses during the seven years of the study from 2010 to 2016. In 2022, Montgomery County, Ohio, the county where Dayton is located, was identified as "the overdose capital of the United States" (Ohio Hospital for Psychiatry, 2022, para. 1). However, the opioid crisis is not always associated with metropolitan areas such as Dayton, Ohio. Instead, Appalachian Ohio is often brought to the forefront as a noted site of the opioid crisis (Quinones, 2015; Skinner & Franz, 2019). According to Schalkoff et al. (2021), "Appalachia, in particular, has emerged as a hotspot for opioid use and related consequences. Compared to the non-Appalachian region of the country, the Appalachian region has experienced higher rates of opioid prescribing and opioid overdose deaths" (p. 650).

The Appalachian region, generally, has long been characterized as a rural place (Batteau, 1979; Obermiller & Maloney, 2016; Raitz & Ulack, 1981). Therefore, much of the medical literature on opioids as a rural problem coincides with that of opioids as a primarily Appalachian issue (Moody et al., 2017; Richard et al., 2020; Schalkoff et al., 2020). Prior to the COVID-19 pandemic, medical doctors were calling the Appalachian opioid crisis “one of the most challenging health issues of our time” (Becker, 2016, para. 1). This depiction was then chiefly

referring to rural Central Appalachia (Eastern Kentucky, southwestern Virginia, and parts of southern West Virginia and northern Tennessee) (Appalachian Regional Commission, 2019). However, the notion of opioids as an “American” concern typically is characterized in Appalachia as an American region of poverty and rurality. We argue that the Appalachian region has been mediated mostly as the principal location of opioid abuse disorder in public venues and popular culture (Achenbach et al., 2019; Joy, 2020; Macy, 2019, 2020; McGreal, 2018; Quinones, 2015; Sreenivasan & Kane, 2017). Even the Appalachian Regional Commission (2019) has labeled the opiate crisis *a regional epidemic*.

To analyze the distinct challenges faced may require a deeper understanding of the educational experiences of educators and students in both rural and non-rural as well as Appalachian and non-Appalachian communities. Educational leaders in these distinct but hard-hit areas may provide a critical perspective of focus.

### **Educational Leaders and Opioids as a Chronic Crisis**

The role of the educational leader has been characterized as coping with and managing dilemmas (Cardno, 2007; Peleg, 2012). Likewise, *the crisis* has become inherently connected to educational leaders (Ackerman & Maslin-Ostrowski, 2004; Gurr, 2020; Heffernan et al., 2022; Shapiro & Gross, 2013). Crisis and uncertainty are defining characteristics of the types of challenges that leaders often must address (Gross, 2020; Johnson, 2018; Shapiro & Gross, 2013). In times of crisis, stakeholders look to the leader during extreme contexts to define the problems related to the crisis, identify potential solutions, and effectively respond to the crisis (Yukl, 2013). As educational environments have seen a rise in national and global crises, the practice of crisis leadership has become an even more entrenched and integral feature of educational leadership (Gurr, 2020; Grissom & Condon, 2021; Harris, 2020; Marshall et al., 2020; Mbogo, 2020). However, the opioid crisis represents what can be labeled *a chronic crisis* (Lemos Dekker et al., 2021; Mantler et al., 2023; Vigh, 2008).

Vigh (2008) explored the chronic conditions of crisis. Vigh noted that crisis is typically viewed as an isolated tragic event—a “moment of rupture” (p. 9). He posited that this idea of crisis as a singular critical event is “related to confusion between the related concepts of crisis and trauma” (p. 9). However, Vigh argued,

“Crisis is not rupture; it is fragmentation, a state of somatic, social, or existential



incoherence. It is 'discrimination' in the understanding of separation, as a situation in which a whole or a unity has been dismantled and particularized into its parts." (p. 9) Due to this incoherence, Vigh offers an alternative and critical perspective of crisis as "a condition of instability," a prolonged experience rather than instantaneous, a protracted rather than an isolated incident. In this sense, the crisis is a chronic and persistent adverse experience directly linked to trauma (Lemos Dekker et al., 2021; Vigh, 2008). The conditions in schools created by the opioid epidemic are a matter of crisis-turned-chronic. It requires that stakeholders "look in more detail into the ways in which different people live with and in crises that have become chronic, part of the everyday, and that may no longer be considered abnormal" (Lemos Dekker et al., 2021, p. 18).

Superintendents and principals alike must respond to the ongoing critical events, situations, and predicaments, as well as chronic conditions that disrupt the educational processes of their schools and districts as Lemos Dekker et al. (2021) have reflected, "Framing a situation as critical demands a response. Such a response is informed by the resources that different stakeholders must navigate the situation, the past experiences from which they have learned, and the contingencies of their lives" (p. 17). Often, the responses of educational leaders must be enacted with limited preparation or having had little experience in dealing with similar circumstances previously in their practice (Carter, 2019; Direen, 2017; Duchek et al., 2020; Hemmer & Eliff, 2020; Matthews, 2020; Mutch, 2015). The frameworks and perceptions adopted by these administrators in times of turbulence and uncertainty may have crucial implications for the students and staff in the organizations they lead (Ackerman & Maslin Ostrowski, 2004; Doscher & Normore, 2008; Gainey, 2009; Mazurkiewicz, 2021; Snowden & Boone, 2007).

Although district superintendents and building principals are vulnerable to the impacts and tensions caused by crises, each position has a distinctive role in the educational venue. The roles and responsibilities of both leaders have been shaped around long-evolving ideas and ideals (Bush & Glover, 2014; Caldwell, 1993; Ediger, 2014; Hallinger, 1992; Kowalski & Oates, 1993; Kowalski, 2005; Leithwood, 1994; Leithwood & Louis, 2021; Murphy, 1994; Tirozzi, 2001). Principals foster parent-school engagement (Barr & Saltmarsh, 2014) and school-community relations (Epstein et al., 2011; Mayger & Provinzano, 2022), cultivate a professional learning

climate at the building level (Cherkowski, 2016), promote initiatives to increase student success (Terziu et al., 2016), and have a well-established role in improving the overall learning environment and organizational change in their schools (Congreve, 1964; Leithwood & Montgomery, 1985; Qadach et al., 2020).

Even though principals carry the epithet of instructional leaders, district superintendents may more often be seen as community or political leaders (Author 1 et al., 2017; Björk et al., 2014; Björk & Gurley, 2005) or even as district CEOs (Björk et al., 2018; Hoyle et al., 2005). According to Carter and Cunningham (1997), the school superintendent negotiates community politics and controversy, resolves conflict with board members, and must cope with daily crises at the district level. Superintendents also build community alliances, foster innovative school programming, and develop their district's capacity for continuous improvement and strategic planning; often, they are asked to do these tasks with fewer and fewer resources and support (Carter & Cunningham, 1997; Hoyle et al., 2005). Due to these contrasts, each type of educational leader potentially views the opioid crisis through a different lens.

Responding adequately and effectively to the opioid crisis presents challenges for school leaders (Author 1 et al., 2020; Author 1 et al., 2022; Burfoot-Rochford, 2020; Welby, 2019b). Studies have found that school leaders and other educators may feel overwhelmed and underprepared to deal with the effects that opioids can have on their students and schools (Author 1 et al., 2020; Welby, 2019a, 2019b). As a result, these decision-makers may be compelled to frame responses to the opioid epidemic's impact on education that are based on personal perception and available resources instead of carrying out more effective or evidence-based actions. As Burfoot-Rochford (2020) has noted, educational leaders, particularly superintendents in rural areas, may find that they must rely on external support or community partnerships if "successful responses to the opioid crisis [are to] occur in their districts" (p. 2). These leaders may have to work to counter "perspectives that create roadblocks for leaders in their attempts to implement and find support for responsive equitable school/district practices" (p. 3).

### **Methods**

This study utilized a quantitative exploratory survey, which used online survey data to investigate the perspectives of practicing Ohio school leaders (i.e., principals and

superintendents) concerning the impact of opioids on their schools and their students. Online surveying was a suitable approach over traditional surveys for reduced cost and ease of analysis (McPeake et al., 2014). This approach was also helpful since data collection occurred during the COVID-19 pandemic. A sample of principals and superintendents in Ohio were selected randomly. The study asked school leaders to respond to a short series of value statements that address various aspects of opioid-related issues and the school community. This research aimed to explore the perceived impact of the opioid crisis on schools and students in a state experiencing a substantial number of high opioid-related overdose incidents (Brett et al., 2023). This section details the research design, sample selection, data collection, and analysis methods.

### **Research Design**

This quantitative study used an exploratory survey research design—a type of survey research used to gather preliminary data and insights on a particular topic. This method explored the research topic and developed a more focused research question for further investigation. In this type of design, a survey is used as the primary data collection tool. Quantitative exploratory survey research design (Welton et al., 2014) is beneficial when little is known about the research topic. It can also be used to identify potential relationships between variables, which can inform future research questions and hypotheses and prepare the foundation for further research.

The study used a researcher-developed online survey as the research tool to collect data from the randomly obtained sample. An online survey is the fastest and lowest-cost method to deliver surveys (Veen et al., 2016). The survey consisted of six demographic questions: Leadership Role (Principal/Superintendent), School Typology (Rural, Urban, Suburban), Socioeconomic Status (High or Low High-Need Status), School Location (Appalachian Ohio vs Non-Appalachian Ohio), Gender, and Race or Ethnicity. Likewise, The Opioid Impact questionnaire included 17 questions or value statements related to the impact of the Opioid Crisis on students and schools. These 17 questions were grouped under five impact areas: (a) Impact of Opioids on Students and Schools, (b) Educator Experience with Opioids Impact on Students and Schools, (c) Resources and Policies to Address Opioid Impact on Students and Schools, (d) Professional Development and Obligation to Respond, and (e) Impact on Leader's Decision Making.

### **Sample Selection and Data Collection**

The target sample frame for this research was randomly selected school principals and superintendents in the state of Ohio in the United States. After compiling a sample frame based on available contact information in Qualtrics, the software's random sampling tool was used to select 600 possible respondents. Participants had 15 days to respond to the survey. Follow-up emails were sent to the nonresponsive sample frame. The survey remained active for 1.5 months. The survey was anonymous, and participants were informed about the purpose of the study and the confidentiality of their responses. The survey was administered using Qualtrics, the online platform, and 247 participants responded. After removing incomplete responses, 217 (Principals  $n=164$ ; Superintendents  $n=53$ ) valid responses were used for analysis.

### **Data Analysis**

Descriptive statistics (Fisher & Marshall, 2009) were used to analyze responses tabulating with the demographic data. Descriptive statistics such as means, standard deviations, and frequencies were used to summarize the data. Once descriptive statistics for each of the 17 value statements were analyzed. The collective aggregated score for each of the five sections was further evaluated. A series of independent sample t-tests were conducted to determine differences in the overall perceptions of school leaders regarding the impact of the Opioid Crisis on Students and schools based on demographics: Leaders' Role, High-Need Status of the School, and Appalachian and Non-Appalachian Schools. A cloud-based data analysis portal, Intellects Statistics, and SPSS software were used.

### **Validity Reliability and Research Ethics**

Multiple measures were taken as suggested to ensure the validity and reliability of the study (Taherdoost, 2016). The survey was designed based on previous literature and pilot-tested before being administered to the participants. The survey was anonymous, and participants were informed about the purpose of the study and the confidentiality of their responses. The study was approved by the institutional review board (IRB) of the researchers' institutions. Approval was obtained to protect the rights of participants (Creswell, 2018). By taking these measures, the study produced valid and reliable results.

### **Cronbach's Alpha**

The items for the Opioid Impact on Schools and Students (OISS) Questionnaire had a

Cronbach's alpha coefficient of .88, indicating good reliability. Table 1 presents the results of the reliability analysis.

**Table 1**

*Reliability Table for Opioid*

Scale	No. of Items	$\alpha$	Lower Bound	Upper Bound
Opioid	17	.88	.86	.90

*Note.* The lower and upper bounds of Cronbach's  $\alpha$  were calculated using a 95.00% confidence interval.

The Cronbach's alpha coefficient was evaluated using the guidelines suggested by George and Mallery (2018), where > .9 excellent, > .8 good, > .7 acceptable, > .6 questionable, > .5 poor, and  $\leq$  .5 unacceptable.

## Results

### Descriptive Analysis

Frequencies and percentages were calculated for Role, Location, Typology, and High-Need.

**Table 2**

*Frequency Table for Nominal Variables*

Variable	<i>n</i>	%
<b>Role</b>		
Principal	164	75.58
Superintendent	53	24.42
<b>Location</b>		
No, my school or district is not located in Appalachian Ohio	139	64.06
Yes, the school/district is in one of the 32 counties of Appalachian Ohio	78	35.94
<b>Typology</b>		
Suburban	45	20.74
Rural	144	66.36

Urban	28	12.90
<b>High-Need</b>		
0 - 24% economically disadvantaged	30	13.82
25% - 49% economically disadvantaged	90	41.47
75% - 100% economically disadvantaged	45	20.74
50% - 74% economically disadvantaged	52	23.96

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*Note.* Due to rounding errors, percentages may not equal 100%.

### **Descriptive Statistics**

Summary statistics were calculated for all variables, including a major negative impact of opioids on the educational environment of the school or district, impact on the ability of students to learn (Student Learning), Impact on Behavior, Impact on Socioemotional Wellbeing of students, personal knowledge (Firsthand Encounters) of a student who has lost a parent or caregiver (Loss of Family) or has had a family member incarcerated due to opioids (Family Incarceration), and Trauma Informed Care training provided. For the survey, these were arranged according to 1) the perceived overall impact of opioids on schools and students, 2) educator's Firsthand experience with the impact of opioids on students and school, 3) resources and policies to address the impact of opioids on students and schools, 4) professional development opportunities provided and the professional obligation to be responsive to the opioid crisis, and 5) the leader's perception of the negative impact of the opioid crisis had on their decision-making.

*Descriptive Statistics Summary***Table 3***Summary Statistics Table for Interval and Ratio Variables*

Variable	<i>M</i>	<i>SD</i>	<i>n</i>	<i>SE<sub>M</sub></i>	Min	Max	Skewness	Kurtosis
<b>Schools and Students</b>	<b>4.50</b>	<b>0.69</b>	<b>217</b>	<b>0.05</b>	<b>2.00</b>	<b>5.00</b>	<b>-1.86</b>	<b>3.08</b>
Educational Environment	4.06	1.12	217	0.08	1.00	5.00	-1.17	0.58
Student Learning	4.94	0.25	217	0.02	3.00	5.00	-4.76	24.17
Student Behavior	4.46	0.92	217	0.06	1.00	5.00	-2.03	3.98
Socio-Emotional Wellbeing	4.54	0.89	217	0.06	1.00	5.00	-2.26	4.76
<b>Firsthand Encounters</b>	<b>4.40</b>	<b>1.07</b>	<b>217</b>	<b>0.07</b>	<b>1.00</b>	<b>5.00</b>	<b>-2.05</b>	<b>3.31</b>
Loss of Family	4.22	1.34	217	0.09	1.00	5.00	-1.57	0.99
Family Incarceration	4.48	1.12	217	0.08	1.00	5.00	-2.31	4.15
Academic Impact	4.44	1.10	217	0.07	1.00	5.00	-2.11	3.41
Behavioral Concerns	4.44	1.06	217	0.07	1.00	5.00	-2.10	3.65
<b>Required Resources</b>	<b>4.34</b>	<b>0.91</b>	<b>217</b>	<b>0.06</b>	<b>1.00</b>	<b>5.00</b>	<b>-1.52</b>	<b>2.02</b>
Educator Access to Support	3.58	1.12	217	0.08	1.00	5.00	-0.67	-0.50
Adequate Resources & Support	4.57	0.56	217	0.04	2.75	5.00	-1.29	0.75
More External Support Needed	4.66	0.63	217	0.04	2.00	5.00	-1.98	3.92
Financial Support Required	4.64	0.73	217	0.05	1.00	5.00	-2.31	5.48
<b>Prof. Develop. /Obligation</b>	<b>4.22</b>	<b>0.53</b>	<b>217</b>	<b>0.04</b>	<b>2.75</b>	<b>5.00</b>	<b>-0.54</b>	<b>-0.45</b>
Opioid Crisis in Ed Planning	4.64	0.60	217	0.04	2.00	5.00	-1.58	1.99
Trauma Informed Care	4.14	1.22	217	0.08	1.00	5.00	-1.48	1.10
Moral Obligation to Advocate	4.76	0.51	217	0.03	2.00	5.00	-2.20	5.21
Moral Obligation to Intervene	4.41	0.75	217	0.05	2.00	5.00	-1.23	1.22
<b>Leader Decision Making</b>	<b>4.11</b>	<b>1.03</b>	<b>217</b>	<b>0.07</b>	<b>1.00</b>	<b>5.00</b>	<b>-1.11</b>	<b>0.59</b>

*\*Bold headings represent composite****Overall Impact on School and Students***

An analysis of variance (ANOVA) was conducted to determine whether there were

significant differences in the overall impact of opioids on schools and students (the system as a whole) by Role, Typology, Location, and High-Need (HN) situation.

**Table 4**

*Analysis of Variance Table for Impact School and Students by Role, Typology, Location, and HN*

Term	<i>SS</i>	<i>df</i>	<i>F</i>	<i>p</i>	$\eta_p^2$
Role	0.04	1	0.10	.751	0.00
Typology	0.23	2	0.29	.751	0.00
Location	5.16	1	12.73	< .001	0.06
High-Need	3.58	1	8.83	.003	0.04

The ANOVA was examined based on an alpha value of .05. The results of the ANOVA were significant,  $F(5, 211) = 8.60, p < .001$ , indicating there were significant differences in School and Students among the levels of Role, Typology, Location, and High-Need status (Table 52). The main effect was that Role was insignificant,  $F(1, 211) = 0.10, p = .751$ , indicating no significant differences between School and Students by Role levels. The main effect, Typology, was insignificant,  $F(2, 211) = 0.29, p = .751$ , indicating no significant differences in Impact on School and Students by Typology levels. The main effect, location, was significant,  $F(1, 211) = 12.73, p < .001, \eta_p^2 = 0.06$ , indicating significant differences in School and Students by Location levels. The main effect, High-Need, was significant,  $F(1, 211) = 8.83, p = .003, \eta_p^2 = 0.04$ , indicating significant differences in School and Students by HN levels. The means and standard deviations are presented in Table 53.

**Post-hoc.** Paired *t*-tests were calculated between each pair of measurements to examine further the differences among the variables based on an alpha of .05. The Tukey HSD *p*-value adjustment was used to correct the effect of multiple comparisons on the family-wise error rate. For the main effect of location, the mean Impact of Opioids on Schools and Students for *No, my school or district is not located in Appalachian Ohio* ( $M = 4.33, SD = 0.75$ ) was significantly smaller than for *Yes, my school or district is in one of the 32 counties of Appalachian Ohio* ( $M =$



4.80,  $SD = 0.44$ ),  $p < .001$ . For the main effect of HN, the mean Impact of Opioids on Schools and Students for Low High-Need ( $M = 4.29$ ,  $SD = 0.79$ ) was significantly smaller than for High High-Need ( $M = 4.76$ ,  $SD = 0.43$ ),  $p = .017$ .

### ***Educational Environment***

An analysis of variance (ANOVA) was conducted to determine whether there were significant differences in Opioid Impact on Educational Environment by Role, Location, and High-Need (HN). The Educational Environment is distinguished from School and Students by the point at which learning and academic interactions occur.

**Table 5**

*Analysis of Variance Table for Impact on Educational Environment by Role, Location, and HN*

Term	SS	df	F	p	$\eta_p^2$
Role	1.51	1	1.50	.222	0.01
Location	21.03	1	20.88	< .001	0.09
HN	12.98	1	12.89	< .001	0.06

The ANOVA was examined based on an alpha value of .05. The results of the ANOVA were significant,  $F(3, 213) = 18.03$ ,  $p < .001$ , indicating there were significant differences in Impact on Educational Environment among the levels of Role (Superintendent vs. Principal), Location (Appalachia vs. non-Appalachia), and HN (high or low socioeconomic status of school) (Table 4). The main effect, Role, was insignificant,  $F(1, 213) = 1.50$ ,  $p = .222$ , indicating no significant differences in Educational Environment by Role levels. The main effect, location, was significant,  $F(1, 213) = 20.88$ ,  $p < .001$ ,  $\eta_p^2 = 0.09$ , indicating significant differences in the Impact of Opioids on the Educational Environment by Location levels. The main effect, HN, was significant,  $F(1, 213) = 12.89$ ,  $p < .001$ ,  $\eta_p^2 = 0.06$ , indicating significant differences in Educational Environment by HN economic levels.

***Post-hoc.*** Paired *t*-tests were calculated between each pair of measurements to examine further the differences among the variables based on an alpha of .05. The Tukey HSD *p*-value

adjustment was used to correct the effect of multiple comparisons on the family-wise error rate. For the main effect of location, the mean Impact of Opioids on the Educational Environment for "No, my school or district is not located in Appalachian Ohio" ( $M = 3.76$ ,  $SD = 1.18$ ) was significantly smaller than for "Yes, my school or district is located in one of the 32 counties of Appalachian Ohio" ( $M = 4.62$ ,  $SD = 0.72$ ),  $p < .001$ . For the main effect of HN, the mean of Educational Environment for Low High-Need ( $M = 3.72$ ,  $SD = 1.18$ ) was significantly smaller than for High-Need ( $M = 4.49$ ,  $SD = 0.86$ ),  $p = .001$ .

### Firsthand Encounters

An analysis of variance (ANOVA) was conducted to determine whether there were significant differences in Firsthand Encounters by Role, Location, Typology, and High-Need (HN). Although principals and superintendents across the state had high levels of first-hand encounters with opioids ( $M=4.40$ ) in their schools, there was no significant difference based on Role, Location, Typology, or HN status.

**Table 6**

*Analysis of Variance Table for Firsthand Encounters by Role, Location, Typology, and HN*

Term	SS	df	F	p	$\eta_p^2$
Role	1.10	1	1.05	.306	0.00
Location	11.31	1	10.77	.001	0.05
Typology	2.06	2	0.98	.377	0.01
HN	2.56	1	2.44	.120	0.01
Residuals	221.56	211			

The ANOVA was examined based on an alpha value of .05. The results of the ANOVA were significant,  $F(5, 211) = 5.07$ ,  $p < .001$ , indicating there were significant differences in Firsthand Encounters with Opioids indicators among the levels of Role, Location, Typology, and High-Need (HN) (Table 54). The main effect, Role, was insignificant,  $F(1, 211) = 1.05$ ,  $p = .306$ , indicating no significant differences in Firsthand Encounters by Role levels. The main effect, location, was significant,  $F(1, 211) = 10.77$ ,  $p = .001$ ,  $\eta_p^2 = 0.05$ , indicating significant differences in Firsthand Encounters by Location levels. Typology's main effect was insignificant,

$F(2, 211) = 0.98, p = .377$ , indicating no significant differences in Firsthand Encounters by Typology levels. The main effect, HN, was insignificant,  $F(1, 211) = 2.44, p = .120$ , indicating no significant differences in Firsthand Encounters by HN levels. The means and standard deviations are presented in Table 55.

**Post-hoc.** Paired *t*-tests were calculated between each pair of measurements to examine further the differences among the variables based on an alpha of .05. The Tukey HSD *p*-value adjustment was used to correct the effect of multiple comparisons on the family-wise error rate. For the main effect of location, the mean of Firsthand Encounters for No, my school or district is not located in Appalachian Ohio ( $M = 4.19, SD = 1.25$ ) was significantly smaller than for Yes, my school or district is in one of the 32 counties of Appalachian Ohio ( $M = 4.77, SD = 0.47$ ),  $p < .001$ .

### Adequate Resources and Support

An analysis of variance (ANOVA) was conducted to determine whether there were significant differences in Adequate Resources and Support for educators to respond to the opioid crisis by Role, Location, Typology, and HN.

**Table 7**

*Analysis of Variance Table for Adequate Resources and Support by Role, Location, Typology, and HN*

Term	<i>SS</i>	<i>df</i>	<i>F</i>	<i>p</i>	$\eta_p^2$
Role	0.19	1	0.66	.418	0.00
Location	3.88	1	13.62	< .001	0.06
Typology	0.76	2	1.33	.267	0.01
HN	0.69	1	2.42	.121	0.01
Residuals	60.12	211			

The ANOVA was examined based on an alpha value of .05. The results of the ANOVA were significant,  $F(5, 211) = 5.79, p < .001$ , indicating there were significant differences in Adequate Resources and Support for educators among the levels of Role, Location, Typology, and HN (Table 56). The main effect was that Role was insignificant,  $F(1, 211) = 0.66, p = .418$ ,

indicating no significant differences in Adequate Resources and Support by Role levels. The main effect, the location, was significant,  $F(1, 211) = 13.62, p < .001, \eta_p^2 = 0.06$ , indicating significant differences in Adequate Resources and Support by Location levels. The main effect, Typology, was insignificant,  $F(2, 211) = 1.33, p = .267$ , indicating no significant differences between Adequate Resources and Support by Typology levels. The main effect, HN, was insignificant,  $F(1, 211) = 2.42, p = .121$ , indicating no significant differences in Adequate Resources and Support by HN levels.

**Post-hoc.** Paired *t*-tests were calculated between each pair of measurements to examine further the differences among the variables based on an alpha of .05. The Tukey HSD *p*-value adjustment was used to correct the effect of multiple comparisons on the family-wise error rate. For the main effect of location, the mean of Adequate Resources and Support for *No, my school or district is not located in Appalachian Ohio* ( $M = 4.45, SD = 0.62$ ) was significantly smaller than for *Yes, my school or district is in one of the 32 counties of Appalachian Ohio* ( $M = 4.78, SD = 0.35$ ),  $p < .001$ .

### Professional Development

An analysis of variance (ANOVA) was conducted to determine whether there were significant differences in Professional Development provided for responding to the impact of opioids in schools by Role, Location, Typology, and HN.

**Table 8**

*Analysis of Variance Table for Professional Development by Role, Location, Typology, and HN*

Term	<i>SS</i>	<i>df</i>	<i>F</i>	<i>p</i>	$\eta_p^2$
Role	0.21	1	0.77	.380	0.00
Location	0.86	1	3.11	.079	0.01
Typology	0.16	2	0.29	.751	0.00
HN	0.15	1	0.54	.465	0.00
Residuals	58.34	211			

The ANOVA was examined based on an alpha value of .05. The results of the ANOVA were not significant,  $F(5, 211) = 1.39, p = .231$ , indicating the differences in Professional Development opportunities provided for responding to the opioid crisis among the levels of Role, Location, Typology, and HN were all similar (Table 58). The main effect, Role, was insignificant,  $F(1, 211) = 0.77, p = .380$ , indicating no significant differences in Professional Development by Role levels. The main effect was that location was insignificant,  $F(1, 211) = 3.11, p = .079$ , indicating no significant differences in Professional Development by Location levels. The main effect, typology, was insignificant,  $F(2, 211) = 0.29, p = .751$ , indicating no significant differences in professional development by typology levels. The main effect, HN, was insignificant,  $F(1, 211) = 0.54, p = .465$ , indicating no significant differences in Professional Development by HN levels.

**School Leader Decision Making**

An analysis of variance (ANOVA) was conducted to determine whether there were significant differences in the impact of opioids on Leader Decision Making by Role, Location, Typology, and High-Needs.

**Table 9**

*Analysis of Variance Table for Impact on Leader Decision Making by Role, Location, Typology, and HN*

Term	SS	df	F	p	$\eta_p^2$
Role	0.08	1	0.09	.769	0.00
Location	15.12	1	16.34	< .001	0.07
Typology	0.84	2	0.46	.634	0.00
HN	4.20	1	4.54	.034	0.02
Residuals	195.23	211			

The ANOVA was examined based on an alpha value of .05. The results of the ANOVA were significant,  $F(5, 211) = 7.37, p < .001$ , indicating there were significant differences in leader decision-making among the levels of Role, Location, Typology, and HN (Table 60).

The main effect, Role, was insignificant,  $F(1, 211) = 0.09, p = .769$ , indicating no significant differences in Leader Decision Making by Role levels. The main effect, the location, was significant,  $F(1, 211) = 16.34, p < .001, \eta_p^2 = 0.07$ , indicating significant differences in Leader Decision Making by Location categories. The main effect, Typology, was insignificant,  $F(2, 211) = 0.46, p = .634$ , indicating no significant differences in Leader Decision Making by Typology classifications. The main effect, HN, was significant,  $F(1, 211) = 4.54, p = .034, \eta_p^2 = 0.02$ , indicating significant differences in Leader Decision Making by HN levels.

**Post-hoc.** Paired *t*-tests were calculated between each pair of measurements to examine further the differences among the variables based on an alpha of .05. The Tukey HSD *p*-value adjustment was used to correct the effect of multiple comparisons on the family-wise error rate. For the main effect of location, the mean of Leader decision-making for *No, my school or district is not located in Appalachian Ohio* ( $M = 3.86, SD = 1.11$ ) was significantly smaller than for *Yes, my school or district is in one of the 32 counties of Appalachian Ohio* ( $M = 4.56, SD = 0.68$ ),  $p < .001$ . No other significant effects were found.

## Discussion

This study explored the perceptions of superintendents and principals regarding the impact of the opioid crisis on students and schools in Ohio. The aim was to investigate the dynamics of school leaders' perspectives at the building and district levels in Appalachian and non-Appalachian regions, in rural and non-rural, and in high-high-need and low-high-need schools. The findings confirm the importance of examining the role that perception plays in understanding the opioid epidemic and responding to the crisis in informed and well-framed ways.

### Role

Leaders in each role indicated managing the dilemmas related to opioids (Cardno, 2007; Peleg, 2012). The term *crisis* has become inherently connected to educational leadership (Ackerman & Maslin-Ostrowski, 2004; Gurr, 2020; Heffernan et al., 2022; Shapiro & Gross, 2013). Principals and superintendents of this study did not differ in their views of the impact of opioids; however, both roles had high mean scores for all domains (Schools and Students, Firsthand Encounters, and Resources). The analysis found no significant effect based on the

school leaders' role. Superintendents and principals both understood the significant negative impact that opioids had on their students and schools to similar degrees in all indicators.

### **High-Need**

Data relating to socioeconomic status revealed significant differences in the perceptions of low- and high-need school leaders. According to Nicholson (2020),

“Higher SES levels were associated with lower odds of prescription opioid use behaviors. However, SES was indirectly related to prescription opioid use behaviors via indicators of poor health and two types of flexible resources, namely health care access and social support.” (p. 19).

High high-need noted a significantly higher Impact on Schools and Students, with a mean score of 4.76 over 4.29 for low high-need. This was true for Firsthand Encounters, Resources and Support, and Leader Decision Making indicators. Leader decision-making had a mean of 3.85 for low, high-need, more affluent school leaders and 4.43 for high, high-need, and low socioeconomic. No significant difference was indicated for the overall Professional Development and moral obligation composite score.

### **Typology**

Many scholars have situated the opioid epidemic as a rural condition (Cochran et al., 2017; Harder et al., 2021; Hazlett, 2018; Palombi et al., 2018). Others, while recognizing the broader reaches of opioids, have acknowledged the critical and sometimes unique impact of the crisis on rural schools and school leadership decisions (Burfoot-Rochford, 2020; Burfoot-Rochford & Schafft, 2021; Harder et al., 2021). Although studies have emphasized the impact of opioids on rural areas, this study found no significant difference between rural and non-rural schools. Means were high for both groups in each of the composite variables.

### **Location**

The findings of this study support the literature and reporting that suggest Appalachian Ohio experiences higher rates of opioid-related incidents (Quinones, 2015; Schallkoff et al., 2021; Skinner & Franz, 2019). This study found a significant difference between the perceptions of Appalachian and non-Appalachian school leaders concerning all indicators: overall Impact on School and Students, Firsthand Encounters, Resources and Support, Professional Development and moral obligation, and Leadership decision-making. Data indicate that the significance was

the highest in terms of Firsthand Encounters (a mean of 4.77 for Appalachian schools and 4.19 for Non-Appalachian) and for Leadership Decision Making (4.56 for Appalachian leaders and 3.86 for non-Appalachian leaders).

### **Limitations and Recommendations for Research**

Given that this was a single-state case study (Ohio), the study is limited by its geographical constraints. However, the benefits of this study extend beyond its generalizability or transferability. The study brings to light the perceptions and perspectives of educational leaders within a bounded system (i.e., a case) that are important in understanding how leaders frame decisions and make meaning of the impact of opioids on their stakeholders and school settings. Future investigations can build on the data presented here and replicate this study in other states that are experiencing high rates of opioid-related incidents. This data can be interpreted regarding preparation and practice. Aspiring and practicing leaders can use these findings to consider better how their perception of the opioid crisis informs their responses to student and stakeholder needs.

Additionally, this study allows practitioners and principal candidates to become more conscious of how the opioid crisis has impacted their schools and communities. Resultantly, recommendations can be offered to conduct similar studies in other states. For example, states such as West Virginia, Kentucky, and Delaware are consistently listed in reports from the Centers for Disease Control and Prevention (CDC, 2021) for the highest opioid-related overdose deaths due to "any opioids" and "illicitly manufactured fentanyl." Likewise, these states are named in the top ten by "prescription opioids." By studying school leader perceptions and responses in high-incident counties of these states with the highest probability of impact on schools, a broader and deeper understanding can be gained as to how educational leaders effectively address the crisis and meet the needs of stakeholders, such as staff and students.

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