

Article

A Comprehensive Community Approach to Preventing Youth Gun Violence: A Longitudinal Study of the ThrYve Initiative

Jomella Watson-Thompson ¹, Valerie M. Thompson ^{1,*}, Jerry A. Schultz ¹, Jeanne Hayes ¹, Kandace Fleming ² and Lauratu Bah ¹

¹ Center for Community Health and Development, University of Kansas, Lawrence, KS 66045, USA; jomellaw@ku.edu (J.W.-T.); jschultz@ku.edu (J.A.S.); mjhayes@ku.edu (J.H.); lauratufbah@ku.edu (L.B.)

² Bureau of Child Research, University of Kansas, Lawrence, KS 66045, USA; kfleming@ku.edu

* Correspondence: val.thompson@ku.edu

Abstract

Youth violence, particularly gun-related, is a pressing public health concern influenced by key risk factors and broader structural inequities that shape community conditions. The ThrYve (“Together Helping Reduce Youth Violence”) initiative, a multisector, multilevel community strategy in Kansas City, targeted social and structural determinants of youth violence. Guided by the Institute of Medicine’s Model for Collaborative Action in Communities, the ThrYve approach supported five evidence-informed components including: (1) coalition development with over 40 partners; (2) youth violence prevention programs in hospitals, schools, and the community; (3) out-of-school time supports for youths; (4) education, college, and career readiness initiatives; and (5) youth/family navigation supports. A mixed-method, quasi-experimental design examined pre/post changes in youth risk and behavior, longitudinal youth homicide trends, and documented coalition-facilitated community and systems changes. Between 2018 and 2024, the ThrYve coalition implemented 243 new or modified programs, policies, and practices promoting safer, supportive community environments. During the intervention phase, youth homicide rates in the intervention catchment area declined by 42.3% from baseline, and significant within-group improvements were observed in selected risk factors among ThrYve participants. Findings suggest the value of coalition-based, systems-level, community- and youth-engaged strategies for youth violence prevention.

Keywords: youth violence prevention; youth gun violence prevention; community-based intervention; community coalition; risk factors; structural determinants; positive youth development; multisector



Academic Editor: Todd Michael Franke

Received: 4 June 2026

Revised: 8 July 2026

Accepted: 15 July 2026

Published: 19 July 2026

Copyright: © 2026 by the authors.

Licensee MDPI, Basel, Switzerland.

This article is an open access article distributed under the terms and conditions of the [Creative Commons Attribution \(CC BY\)](https://creativecommons.org/licenses/by/4.0/) license.

1. Introduction

Youth gun violence is a major public health concern in the United States, and gun-related injuries and deaths remain one of the leading causes of mortality among adolescents and young adults ([Centers for Disease Control and Prevention \[CDC\], 2024b](#)). In 2024, an estimated 44,447 people died from gun-related injuries in the United States ([CDC, 2025b](#)). Gun-related injuries also carry a substantial economic burden, with annual costs estimated at approximately \$229 billion when accounting for medical expenses and lost productivity ([U.S. Congress Joint Economic Committee, 2019](#)). Among youths aged 10–24, gun-related homicides remained relatively stable from 2017 to 2019 before rising sharply during the COVID-19 pandemic, increasing by approximately 47% at the 2021 peak and remaining

above pre-pandemic levels in subsequent years (CDC, 2023). Furthermore, the burden of gun-related homicide has not been evenly distributed. Black youths are approximately 14 times more likely to die from a gun-related injury compared to White youths, and during the pandemic, this gap widened, with Black youth rates being nearly 16 times higher than that for White youths in 2021 (CDC, 2023).

Beyond mortality, youth gun violence has profound developmental consequences for those directly involved, injured, or exposed through their families, schools, and neighborhoods. Exposure to community and gun violence during adolescence is associated with an increased risk for trauma-related symptoms, including fear, anxiety, depression, feelings of helplessness, and disruptions in emotional regulation (Rajan et al., 2019; T. Thompson & Massat, 2005; Shulman et al., 2021). Moreover, youths who experience or witness gun violence are at an increased risk for later engaging in violence, substance use, and developing other problem behaviors that are known to contribute to long-term cycles of harm across the life span (Bingenheimer et al., 2005; Harper et al., 2023; David-Ferdon et al., 2023).

The effects of youth gun violence extend outside individual victims and reverberate across social contexts. Communities, including schools and neighborhoods, affected by community and gun violence often experience diminished perceptions of safety, weakened social cohesion, and disruptions to community functioning (e.g., heightened fear of crime, lower collective efficacy, and restricted use of public space) (Sampson et al., 1997; Sharkey, 2018; Gard et al., 2022; Harding, 2009). The impacts are disproportionately concentrated in high-burden communities shaped by longstanding racial, ethnic, socioeconomic, and geographic inequities (Center for Gun Violence Solutions, n.d.).

1.1. Social and Structural Determinants

Youth gun violence is associated with multiple risk factors that emerge during adolescence and operate across socio-ecological domains, including individual, family, school, peer, community, and societal levels, as well as broader socioeconomic and socio-cultural contexts (Bronfenbrenner, 1979; McLeroy et al., 1988; CDC, 2024a; Schmidt et al., 2019, WHO, n.d.). Risk factors are the conditions, experiences, or characteristics associated with increased vulnerability to violence involvement and escalation. For instance, risk factors for youth violence at the individual level include prior history and exposure to violence or substance use (CDC, 2024a). These risk factors are influenced and intensified by social determinants of health (SDOH), which are the broader social, economic, and environmental conditions that influence access to safety, resources, support, and opportunity, including economic stability and access to quality education (Dahlgren & Whitehead, 1991; WHO, n.d.; CDC, 2024a; Office of Disease Prevention and Health Promotion [ODPHP], n.d.). At the societal level, a social determinant of health impacting youth gun violence is diminished economic opportunities for youths residing in high-burden communities.

Structural determinants operate at the levels of policies, systems, and institutional practices that influence the distribution of power, resources, and opportunities across communities (WHO, n.d.; Woolf, 2017; CDC, 2024a; Heller et al., 2024) and shape the environments in which people are born, live, learn, and work (CDC, 2024a; Office of Disease Prevention and Health Promotion [ODPHP], n.d.). Structural determinants associated with gun violence include disinvestment in neighborhoods, limited health-related service access, and concentrated poverty (Buggs et al., 2022). These broader structural factors influence social determinants by shaping the distribution of resources, support, and opportunities, and their effects are often exacerbated in high-burden communities experiencing systemic disinvestment and concentrated poverty (Sharkey, 2018). Together, these patterns contribute to opportunity gaps and uneven access to critical resources and experiences across socioeconomic, racial, and geographic contexts (CDC, 2024a; Sharkey, 2018; National

Academies of Sciences, Engineering, and Medicine [NASEM], 2023). Concentrated poverty, reduced community participation, and limited access to quality education are among the conditions associated with increased risk for violence and related health disparities (CDC, 2024a). Over time, such conditions can erode social cohesion and collective efficacy, both of which are factors associated with higher rates of violence in disadvantaged neighborhoods and can contribute to increased exposure to community violence and trauma (Sampson et al., 1997; Buggs et al., 2022).

1.2. Collaborative Approaches to Youth Violence Prevention

Given that youth gun violence impacts local conditions, histories, and systems, comprehensive community-based interventions are well suited to contribute to addressing this complex issue. Central to community-based interventions are cross-sector collaboration and community-guided action that align strategies with community priorities and capacity (Fawcett, 1991; Wallerstein & Duran, 2006). When strategies are tailored to the local community and involve those stakeholders most affected, including youths, this may foster greater buy-in, support stronger and fuller implementation, and increase the likelihood of continuing over time and across funding. This approach also emphasizes the use of comprehensive data to strengthen the current understanding of intervention reach, effectiveness, and impact across community settings. In turn, such data can help communities assess whether interventions are reaching priority populations, refine strategies over time, and examine effects across settings.

Community coalitions support community-based interventions by bringing partners together, coordinating efforts, and mobilizing collective action to address complex social problems, such as youth violence (Schultz et al., 2020; Watson-Thompson et al., 2020). Through community asset building, shared decision-making, and active engagement of those most impacted, including youths, coalitions can support the identification and implementation of strategies that address social and structural determinants associated with youth violence (Watson-Thompson et al., 2008). When mobilizing coalitions, community-based prevention interventions frequently employ frameworks designed to actively engage communities through collaborative, participatory, and systems-level approaches. These frameworks emphasize authentic partnerships, reciprocal community relationships, and community voices in planning, decision-making, and implementation processes (Wallerstein & Duran, 2006; Fawcett et al., 2010).

Multiple frameworks have been employed to guide coalition models for addressing youth violence and related adolescent risk behaviors. As an example, the Communities That Care (CTC) model is an evidence-based framework designed to promote positive youth development through structured community engagement and has demonstrated effectiveness in preventing and reducing youth problem behaviors and sustaining these improvements over time (Hawkins et al., 2014). The CTC model incorporates five phases, including establishing a community coalition, developing a plan and gathering resources, collecting data to identify priority risk and protective factors, developing an action plan, and monitoring outcomes and planning for sustainability (Hawkins et al., 2014).

The Youth Violence Prevention Center–Denver illustrates how the CTC model can support both micro- and macro-level prevention strategies. Initially, CTC was used as a structured planning framework to identify local risk and protective factors and guide the selection of evidence-based youth- and family-focused prevention programs, representing a micro-level approach to reducing risk and strengthening protective factors (Fawcett et al., 1980; Kingston et al., 2021). In a later phase, Denver expanded the CTC process to prioritize community- and policy-level violence prevention strategies with broader population reach and impact. This macro-level approach addressed structural determinants

of violence through systems change, policy development, and environmental improvements designed to promote community well-being and sustain long-term reductions in violence (Fawcett et al., 1980; Kingston et al., 2026). For example, the YVPC–Denver implemented a social norms campaign to promote positive community norms around youth behavior and violence prevention, aiming to influence attitudes and social environments at the population level.

Another example is the Institute of Medicine’s (IOM) Framework for Collaborative Public Health Action in Communities, which provides a systematic model for mobilizing multisector partnerships to improve population-level health outcomes through a continuous and iterative process of assessment, feedback, and adaptation (Fawcett et al., 2005; Fawcett et al., 2010; IOM, 2003; Watson-Thompson et al., 2017). The IOM framework has supported a range of prevention and health initiatives, including the Latino Health for All Coalition to improve health access (Collie-Akers et al., 2013), the Enough Abuse Campaign to address child sexual abuse prevention (Schober et al., 2012), and youth and community violence prevention efforts, including the ThrYve approach (Watson-Thompson et al., 2020, 2008).

Youth Engagement in Community Interventions

Community-based interventions addressing youth violence are strengthened when youths are recognized as both intended beneficiaries and key stakeholders who bring relevant insights into the conditions, systems, and barriers shaping their everyday experiences. Elevating youth roles from program recipients to partners in leadership and planning can strengthen their developmental pathways related to risk, protection, and agency (Checkoway, 2011). When embedded within supportive community structures, youth engagement in leadership, mentoring, and civic activities has been associated with reductions in problem behaviors and improvements in social, emotional, and behavioral outcomes (Messman et al., 2022; Checkoway, 2011).

Positive youth development (PYD) provides a developmental foundation for meaningful youth engagement. PYD activities reduce vulnerability to risk by strengthening protective factors such as social–emotional skills, supportive relationships, leadership opportunities, and a sense of belonging. These experiences help young people develop confidence, competence, and connections needed to participate meaningfully in community life. Youth empowerment extends this developmental foundation by creating formal opportunities for young people to shape the decisions, actions, and systems that affect their lives. This includes structured youth voice, shared decision-making with adults, reflection on social and structural conditions, and participation in civic or sociopolitical processes that support community change (Zimmerman et al., 2018). Through collective action, empowerment-oriented strategies can strengthen personal agency while also increasing the community’s capacity to prevent violence (Jennings et al., 2006).

1.3. ThrYve Initiative: A Community-Engaged Approach to Youth Violence Prevention

Building on the community-based and youth empowerment frameworks described above, the present study evaluated the pilot implementation of ThrYve, a multisector youth violence prevention initiative in Kansas City, Kansas. ThrYve (Together Helping Reduce Youth Violence) is a coalition-driven, community–academic youth violence prevention initiative through which change is facilitated through a comprehensive community intervention. ThrYve uses a community-based participatory approach, where community members are engaged in a participatory process to identify local risks, assets, and priorities and in developing community-identified strategies adapted to local contexts.

As shown in Figure 1, the ThrYve approach supports a five-component model in which multiple factors are addressed across socio-ecological levels. The first component used a coalition approach to engage multisector partners and youths through the ThrYve Collaborative. The ThrYve approach to coalition engagement is guided by the IOM Framework for Collaborative Action in Communities in which community partners, including youths or individuals most affected, were involved in (1) assessing community needs, (2) implementing interventions, (3) modifying community conditions, (4) achieving widespread behavioral change, and (5) enhancing overall population health (IOM, 2003). The ThrYve Collaborative integrates a youth advisory board that engages with other coalition partners to support meaningful youth participation by providing formal structures through which youths exercise shared decision-making authority, shape program priorities, and inform implementation strategies. The second component of the ThrYve approach supports youth violence prevention programs across hospitals, schools, and neighborhoods. The third component engages partners in collaboratively providing an array of out-of-school-time support, including leadership development and skill-building curricula that reinforce prosocial norms, strengthen social support, and build advocacy and leadership competencies. The fourth component addresses academic factors through enrichment activities such as tutoring, college immersion experiences, and college and career readiness activities. The final components offer individual and group-based support through near-peer mentoring and coaching to help youths navigate and achieve their goals.

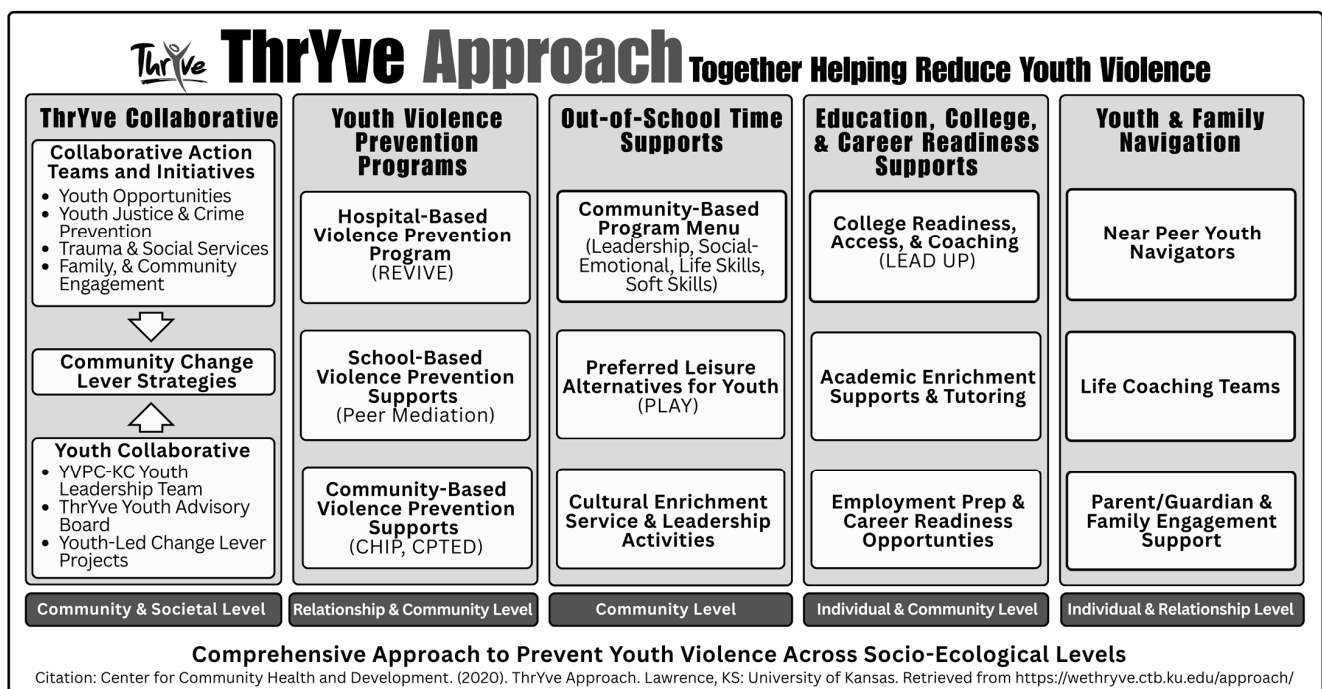


Figure 1. ThrYve (Together Helping Reduce Youth Violence) approach to preventing youth violence.

1.4. Purpose of the Present Study

The present study examined the ThrYve approach from 2017 to 2025. Operating across multiple levels, the initiative implemented coalition-facilitated community and systems change to prevent youth violence by addressing social and structural determinants, while also providing structured programmatic support to youth participants to mitigate risk factors. Using a quasi-experimental, multilevel longitudinal design, the evaluation examined trends in community-level youth violence outcomes, as well as individual-level changes in risk and protective factors among youth participants.

2. Materials and Methods

2.1. Community Context and Setting

The initiative was facilitated in Kansas City, Kansas (KCK), located in Wyandotte County, and part of the Kansas City metropolitan area. KCK has a rich history shaped by its geographic location and evolving social and economic systems. Based on data from the 2020 U.S. Census, KCK has an estimated population of just over 155,000 residents, with individuals aged 10 to 24 comprising roughly one-fifth of the population. KCK is characterized by greater racial and ethnic representation than the state overall. Approximately 21.1% of residents identified as Black compared to 5.6% statewide, while 35.6% identified as Hispanic or Latino compared to 13% statewide, and 4.8% identified as Asian compared to 2.9% across Kansas.

As shown in Table 1, Wyandotte County differed from the state across several socioeconomic indicators in 2020 (U.S. Census, 2020). Compared with Kansas overall, Wyandotte County had a higher percentage of residents living below the federal poverty level, lower median household income, and lower high school completion among young adults aged 18 to 24. Although the county’s employment rate was slightly higher than the statewide average, Wyandotte County showed greater socioeconomic and educational vulnerability than Kansas overall.

Table 1. Socioeconomic indicators for Wyandotte County and Kansas, 2020.

Socioeconomic Indicator	Wyandotte County	Kansas
Median household income	\$59,362	\$68,962
Employment rate	63.50%	62.50%
High school diploma or equivalent, ages 18–24	78.10%	88.40%
Residents below the federal poverty level	14.70%	12.00%

Note. U.S. Census (2020).

Wyandotte County’s median household income is clustered geographically, with lower-income tracts concentrated along the more urbanized central and eastern transportation corridors (U.S. Census, 2020). A similar spatial pattern is evident for homicide, which is likewise concentrated in urban core areas (Figure 2). Within Wyandotte County, Black and Hispanic youths are disproportionately affected by homicide relative to non-Hispanic White youths. In 2022, Black youths experience a homicide rate of 82.2 per 100,000 people and Hispanic youths experience a rate of 62.7 per 100,000, compared to 15.7 per 100,000 for non-Hispanic White youths (Unified Government of Wyandotte County, 2023). Consistent with these disparities, Wyandotte County has the highest gun-related death rate in Kansas, at 30.6 per 100,000, nearly double the statewide rate of 16 per 100,000 (Kansas Health Matters, 2026). Among Black residents in the county, the gun-related death rate reaches 65.8 per 100,000 (2022–2024).

For the present study, the ThrYve initiative focused on two catchment areas defined by high school cluster boundaries. Catchment Area 1 included neighborhoods in the eastern and northeastern portions of the city near the Kansas–Missouri border and north of the Kansas River, whereas Catchment Area 2 encompassed neighborhoods in the southeastern portion of the city south of the Kansas River, including areas near the Turner and Argentine neighborhoods. These areas were selected because of disparities in community conditions and elevated rates for youth violence exposure and victimization.

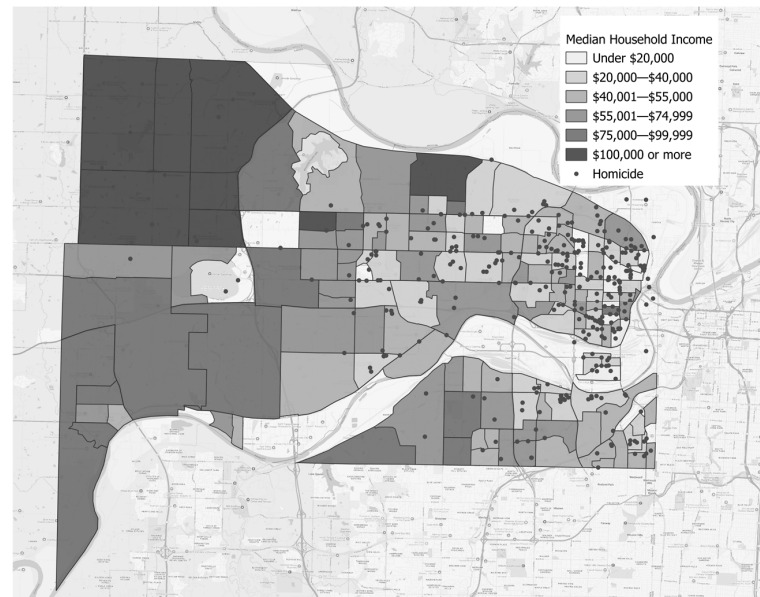


Figure 2. Geographic distribution of homicide incidents and median household income by census tract, Wyandotte County. Dots represent homicide incidents occurring in Wyandotte County from 2016 to 2025. Homicide incident data from Kansas City, Kansas Police Department. Census tract median household income data were obtained from [U.S. Census \(2020\)](#).

2.2. ThrYve Initiative Partners and Coalition Structure

Academic Partner. The KU Center for Community Health and Development (KU CCHD) is a community-engaged research center that supports interdisciplinary and applied behavioral science approaches to advance community health and wellbeing ([Fawcett et al., 2010](#); [Watson-Thompson et al., 2008](#)). The KU CCHD is affiliated with the Life Span Institute and the Department of Applied Behavioral Science at the University of Kansas. The ThrYve initiative was developed as a community–academic partnership that built on KU CCHD’s longstanding community partnerships and history of collaboratively implementing comprehensive community interventions to improve community health and development outcomes.

Since 2017, the KU CCHD has served as the backbone organization for the ThrYve initiative, providing funding acquisition support, technical assistance, coalition facilitation, capacity building, and evaluation. As the convening partner, KU CCHD engaged longstanding and new community partners to advance community-determined goals and led evaluation activities, including systematic documentation of intervention efforts and analyses of secondary data on implementation processes and community-level outcomes.

Community Partners. Launched in October 2017, the ThrYve initiative was implemented through a coalition of more than 40 organizational partners across approximately 15 community sectors, including education and local government, public health, and law enforcement. Youths were intentionally engaged as key stakeholders since its formation through the ThrYve Youth Advisory Board and were actively involved in planning and implementation activities. Collectively, these multisector partners formed the ThrYve Systems and Youth Collaborative, as a coalition to coordinate and collaborate in advancing youth violence prevention efforts.

2.3. Evolution of the ThrYve Initiative with Key Milestones

As summarized in Figure 3, the ThrYve initiative was developed and implemented over multiple years through relationship building, partner coordination, and the identification and alignment of youth violence prevention strategies and resources to address

community-determined goals. Initial funding from the U.S. Department of Health and Human Services (HHS) Office of Minority Health (2017–2021) supported coalition formation, partnership development, identification of priority strategies, and pilot implementation in Catchment Area 1. The youth violence prevention strategies varied in scope and complexity, with some requiring multiyear efforts and substantial systems and policy changes, such as the establishment of the Wyandotte County Youth Fatality Review Committee. In 2021, additional funding from the Centers for Disease Control and Prevention (CDC) supported expansion and sustainability of the initiative through the Youth Violence Prevention Center–Kansas City (YVPC-KC), a CDC-designated National Center of Excellence in Youth Violence Prevention. This expansion supported implementation in Catchment Area 2, enhanced community prevention strategies, expanded youth-led prevention efforts through the YVPC-KC Youth Leadership Team within the ThrYve Youth Advisory Board, and allowed for systematic evaluation of the Hospital Violence Prevention Program (HVPP) across hospital systems in the Kansas City metropolitan area. Figure 3 summarizes activities and milestones across ThrYve intervention components, which are described in greater detail below.

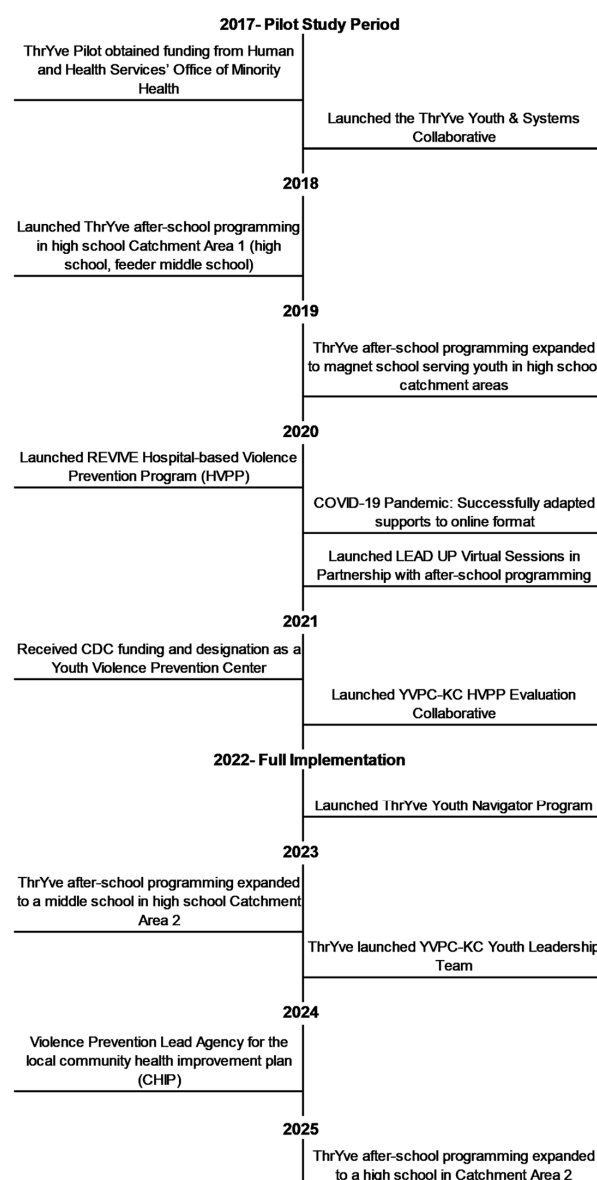


Figure 3. ThrYve initiative implementation timeline from 2017 to 2025.

2.4. The ThrYve Approach: Intervention Components

Intervention Framework: ThrYve Approach. The ThrYve approach (Figure 1) provided a conceptual and operational model for facilitating intervention activities across five interconnected components: (1) developing and sustaining the coalition; (2) facilitating a coordinated menu of violence prevention and intervention supports; (3) expanding out-of-school-time opportunities; (4) promoting education, college, and career readiness pathways; and (5) providing family and youth navigation supports. Table 2 outlines the components and provides illustrative examples of the ThrYve approach.

Table 2. ThrYve approach components and illustrative examples.

ThrYve Approach Component	Focus	Illustrative Examples of Collaborative Action	Key Sectors Engaged	Risk Factors Targeted
ThrYve Collaborative	Coordinate multisector prevention efforts Align partner activities Facilitate community and systems change	Partners identified and implemented community change levers and supported youth advisory board structures.	All, youths	Community disorganization Low neighborhood attachment Laws and norms favorable to drug use
Youth Violence Prevention Programs	Interrupt cycles of violence Connect youths and families with timely supports Improve environmental conditions	Partners implemented programs such as REVIVE, a hospital-based violence prevention program for youths presenting with injuries related to interpersonal violence. Responders engaged youths and families, provided immediate support, helped reduce retaliation risk, and connected victims to services and community resources. Crime Prevention Through Environmental Design (CPTED) strategies focused on improving safety in community spaces.	Hospitals, schools, corrections	Community disorganization Low neighborhood attachment Interaction with antisocial peers Attitudes favorable toward antisocial behavior
Out-of-School Time Supports	Increase access to protective supports Strengthen youth skills and leadership Provide structured alternatives during out-of-school time	Partners offered community-based programming focused on leadership, social–emotional skills, life skills, soft skills, leisure alternatives, cultural enrichment, service, and youth leadership activities.	Youth-serving organizations, schools	Interaction with antisocial peers Attitudes favorable toward antisocial behavior Community disorganization
Education, College, and Career Readiness	Reduce barriers to educational and economic opportunities Strengthen youths' connection to positive future pathways	Partners provided college readiness, academic coaching, tutoring, career readiness, employment preparation, and training opportunities through programs such as LEAD UP.	Youth-serving organizations, schools, businesses	Low neighborhood attachment Interaction with antisocial peers
Youth and Family Navigation	Help youths and families access services Strengthen support networks	Partners supported youths and families through near-peer youth navigators, life coaching teams, and parent/guardian and family engagement supports.	Youths, community residents, community-based organizations	Poor family management Interaction with antisocial peers Attitudes favorable toward antisocial behavior Low neighborhood attachment

ThrYve Collaborative. The ThrYve initiative established the ThrYve Systems and Youth Collaborative (formerly the ThrYve Systems and Youth Advisory Board) in 2017, as a community-level coalition of partners focused on implementing community and systems change. The coalition process was guided by the Institute of Medicine's Framework for Collaborative Action in Communities (IOM, 2003; Watson-Thompson et al., 2017), engaging partners, including youths, in collaborative assessment and planning to identify and implement change lever strategies (i.e., programs, policies, and practices). These strategies

were implemented to modify community conditions and promote widespread behavior change in risk and protective factors to contribute to population-level improvements for youths and the broader community (IOM, 2003).

Change levers were selected through collaborative planning and operated across socio-ecological levels using a continuum of behavior change strategies, including strengthening skills and supports, reducing barriers to access and opportunity, and advancing systems and policy change. The coalition identified 87 specific change lever strategies (see Table 3 for illustrative examples). Each strategy was operationalized through detailed action plans outlining identified community actions and systems-level changes to be facilitated. Additional details on the ThrYve Collaborative’s formation, intervention components, and measures have been previously described (Watson-Thompson et al., 2020; V. M. Thompson et al., 2025).

Table 3. Illustrative examples of ThrYve change lever strategies by socio-ecological level, sector, and risk factor.

Illustrative Examples of Specific Change Strategies	Ecological Level	Facilitating Sector	Risk Factor
Provide skills training on conflict management, negotiation, decision-making, and refusal skills for local youths	Individual	Youth-serving organizations Schools	Interaction with antisocial peers
Establish mentoring programs to enhance job/employment, educational, and secondary education opportunities	Relationship	Community-based organizations	Extreme economic and social deprivation
Provide safe and affordable transportation to supervised recreational opportunities	Community	Government, community-based organizations	Low neighborhood attachment and community disorganization
Establish an ongoing system to provide public recognition for specific community or youth efforts to prevent assaultive violence	Community	Community residents Youths	Media portrayals of violence

Youth Violence Prevention Programs. The ThrYve approach focused on the implementation of youth violence prevention programs across hospitals, schools, and community settings. For example, in the hospital setting, REVIVE, a hospital violence prevention program, uses the hospital encounter as a critical intervention point, engaging youths and families through chaplaincy, community-based credible messengers, and social work support. Through bedside engagement, assessment, discharge planning, and warm handoffs, the program connects youths admitted to the hospital due to intentional injury and their families to ongoing supports post-discharge, including mental health care, legal advocacy, education, workforce supports, and programmatic resources.

Out-of-School Time Supports. Through partnerships with KU CCHD and coalition partners, the ThrYve initiative provided direct support to youths through weekly out-of-school-time programming, individualized coaching, and near-peer mentoring. Programming was offered year-round. During the school year, youths attended after-school sessions facilitated by ThrYve staff at their schools; during the summer, they participated in partner-led programs. Evidence-based curricula, including Youth Empowerment Solutions and Fight Navigator, were used to strengthen prosocial skills such as relationship building and conflict resolution.

All youth participants were members of the ThrYve Youth Advisory Board and had opportunities for additional leadership through the Youth Leadership Team. Youth Leadership Team members served as youth representatives on the ThrYve Collaborative alongside

systems and sector partners. Youths also received leadership and community mobilization training through the ThrYve4Change Community Tool Box curriculum and the Ignite Me Action Civics Curriculum to build their capacity for community action. Through these leadership opportunities, youths contributed to community change by identifying and implementing youth-driven change lever projects with support from coalition partners.

Education, College, and Career Readiness. Group-based sessions also supported academic and life skill development through activities such as entrepreneurship workshops, tutoring, and college action planning. These efforts were further supported through LEAD UP, a community–university partnership program at KU developed by the authors that connected youths with college students who served as tutors and coaches during after-school sessions. ThrYve programming and youth engagement activities were facilitated by University of Kansas staff, community health workers from the communities served, and KU students participating through service-learning and co-curricular opportunities.

Youth and Family Navigation. Individual and group-based supports were designed to help youths identify goals, navigate resources, and strengthen protective relationships. Through near-peer mentoring and coaching, youths received support in working toward academic, personal, leadership, and community engagement goals. For example, youths had an opportunity to engage in the youth navigator program, where youths were trained as community health workers and supported ThrYve-related activities, including outreach, peer engagement, resource navigation, and community-based prevention efforts. Generally, ThrYve youth navigators begin during their senior year in high school and continue for 1–2 years post-graduation.

2.5. Youth Participants

The participants included 144 youths (60 male, 84 female) ranging in age from 13 to 17 years at the time of enrollment in the study ($M = 14$, $SD = 1$). This study focuses on the youth participants, enrolled in grades 8 through 12, and recruited or referred from one of the partnering schools serving the school catchment areas in Kansas City, Kansas (see Table 4). Between 2018 and 2021, during the period of initial recruitment, youth participants were drawn from one participating high school, one feeder middle school, and a local college-preparatory magnet school serving the initial catchment area. From 2022 to 2025, as the study progressed, recruitment and programmatic efforts expanded an additional catchment area that included a second high school and feeder middle school. Overall, youth participants in this study resided in neighborhoods served by one of the two high schools, two middle schools, or the magnet school that participated in this study.

Table 4. Study participants by age at time of enrollment, race, ethnicity, and sex.

Characteristics	<i>n</i> (%)	Characteristics	<i>n</i> (%)
Age		Race	
13 years of age	24 (16.7)	Asian	5 (3.5)
14 years of age	62 (43.1)	Black	86 (59.7)
15 years of age	36 (25.0)	White	20 (13.9)
16 years of age	13 (9.0)	Other/Unknown	33 (22.9)
17 years of age	4 (2.8)	Ethnicity	
Unknown	5 (3.5)	Hispanic	48 (33.3)
Sex assigned at birth		Non-Hispanic	92 (63.9)
Female	84 (58.3)	Other/Unknown	4 (2.8)
Male	60 (41.7)		

Most participants were Black (59.7%), and 33.3% identified as Hispanic. Recruitment occurred on a rolling basis and relied primarily on referrals from school leaders, staff, and

community partners, as well as peer-to-peer youth outreach. Additional efforts included community-based promotional activities such as tabling at afterschool programs and community events.

Youths could participate in the ThrYve program across multiple years following enrollment and remained eligible to continue participation throughout high school. Youths who successfully completed the program could remain involved as Youth Navigators for generally 1 year post-graduation. Most youth participants, at the time of enrollment, were aged 14–15 years or between 8th and 10th grade.

2.6. Measures

In this study, multiple measures were examined, including process, intermediary and community-level outcomes. Process measures were the accomplishments or activities of coalition partners. Individual-level measures examined changes in risk factors for problem behaviors among youth participants, including those associated with violence. At the community level, youth homicide outcomes were examined to assess whether coalition-facilitated community and systems-level changes were associated with changes in violence over time in the community.

2.6.1. Process Measures

Community Changes. Coalition documenters and KU CCHD staff recorded coalition activities and accomplishments in the web-based Community Check Box Evaluation System. Documentation was entered into the system and reviewed at least monthly to support data quality assurance and ensure the completeness and accuracy of reporting. Documented activities were coded and characterized by activity type, socio-ecological level, primary risk factor targeted, and structural and social determinants with which the activity was related. Coding procedures and definitions for community changes are described in detail in a companion manuscript (V. M. Thompson et al., 2025).

The process measure of interest for coalition accomplishments was the implementation of community changes. Community change was defined as new or modified programs, policies, or practices in the community or system (Roussos & Fawcett, 2000). Scoring criteria for a community change are: (a) related to the intervention's goals and objectives; (b) already occurred and/or are ongoing events; (c) new or modified programs, policies, or practices in different parts of the community or system (e.g., government, business, schools, or health organizations); (d) facilitated by coalition members or partners acting on their behalf; and (e) delivered to the community served by the coalition.

Social and Structural Determinants of Health. Community changes were characterized by social and structural determinants of health. Structural determinants were categorized as either cultural determinants, political determinants, or structural systems. Social determinants of health may include education access and quality, healthcare access and quality, neighborhood and built environment, social and community context, and economic stability (Office of Disease Prevention and Health Promotion [ODPHP], n.d.).

Risk Factors. Each community change was coded according to the primary risk factor associated with adolescent problem behavior. Risk factors are conditions that increase the likelihood of adolescent problem behavior associated with violence perpetration and victimization. Documented activities were coded and categorized by 15 risk factors (e.g., availability of guns and family history) across domains (e.g., individual/peer, school, family, and community) (Hawkins et al., 2002).

Socio-ecological Level. The community and systems-level change documented were categorized by social–ecological level. Each documented accomplishment was categorized by the level at which it aimed to affect and the sectors involved in facilitating the activity.

The four social–ecological levels used to categorize the community changes were individual, relationship, community, and society (CDC, 2025a).

Interobserver Agreement. Two independent observers from the KU CCHD reviewed documented activities and community change characterizations for interobserver agreement. Agreement was calculated by dividing the number of agreements by the total number of agreements and disagreements, then multiplying by 100. Interobserver agreement was examined for 77.3% of 6408 documented activities. Documented activities were coded with 85% interobserver agreement. In addition, approximately 37% ($n = 90$) of the 243 documented community changes were secondarily categorized and scored by socio-ecological level (93.6%), duration (93.5%), youth violence risk factor (95.7%), and structural and social determinant classification (90%).

2.6.2. Individual-Level Outcomes

Kansas Communities that Care. Individual-level risk factors associated with youth violence were measured with risk factor scales from the Kansas Communities That Care (KCTC) Student Survey administered in Kansas by the Learning Tree Institute. This validated self-report survey includes measures of youth risk factors associated with problem behaviors, including violence, such as interaction with antisocial peers (Arthur et al., 2002). The selected scales were administered to intervention participants at pre- and post-intervention time points. Table 5 summarizes the six risk factor constructs, their corresponding domains, number of survey items, and representative item descriptions. To aid in contextual understanding of broader trends, statewide data were also examined for corresponding KCTC risk profiles using annual Kansas student estimates.

Table 5. KCTC risk factor domains, constructs, and representative survey items.

Risk Factor	Risk Factor Domain	Number of Survey Items	Representative Survey Items
Laws and norms favorable to drug use	Community	7	Perceived likelihood youths would be caught for drinking alcohol, using marijuana, smoking cigarettes, or carrying a gun without permission; perceived adult attitudes toward youth use of marijuana, alcohol, and cigarettes
Community disorganization	Community	5	Feeling safe in the neighborhood; presence of crime or drug selling, fights, abandoned buildings, and graffiti
Low neighborhood attachment	Community	3	Missing the neighborhood if had to move; liking the neighborhood; would like to get out of neighborhood
Poor family management	Family	8	Clarity of family rules; adults ask if homework is done; adults know where youths are and with whom; likelihood of being caught for curfew violations, skipping school, substance use, or carrying a gun without permission
Interactions with antisocial peers	Peer/Individual	5	Number of best friends suspended from school, selling drugs, stealing a vehicle, being arrested, or dropping out of school
Attitudes favorable toward antisocial behavior	Peer/Individual	4	Perceived wrongness of stealing, fighting, seriously hurting someone, or skipping school

Note. Risk factor domains, number of survey items, and representative item descriptions were based on the Kansas Communities That Care Student Survey core survey question items (Kansas Communities That Care, 2026).

2.6.3. Community-Level Outcomes

Kansas City homicides. To examine community-level homicide trends over time, crime data were obtained from the Kansas City, Kansas Police Department (KCKPD) for the period of 2016 through 2025. KCKPD records included detailed information on homicide incidents in Kansas City, Kansas, including incident location (e.g., block and street, crossroads), injury type (e.g., shooting, blunt force), and victim demographic characteristics, such as age, sex, and race/ethnicity.

2.7. Analytic Strategy

Analysis of community change. For the purposes of this study, documented activities in the Community Check Box from 2015 to 2024 were reviewed. Visual and descriptive statistical analyses were conducted to assess the level and distribution of implementation of documented community changes. The annual number of community changes was used to calculate cumulative changes over time. Community changes were also characterized by associated structural and social determinants, risk factors, and socio-ecological level. For each characterization, frequencies and percentage distributions were calculated annually and as a total over time.

ThrYve youth participant analysis. Youth participation was summarized by calculating the mean number of days youths were enrolled in the study, along with the median and range. KCTC data were reviewed from 2018 to 2025. For each selected KCTC risk factor scale, item responses were combined according to KCTC scoring procedures, and median absolute deviation (MAD) cut-points recommended by CTC researchers were used to classify respondents as at risk or not at risk (Arthur et al., 2002). McNemar's exact test (McNemar, 1947) was used to examine pre- to post-intervention changes in the proportion of students classified as "at risk" for each dichotomized risk factor using matched pre- and post-observations.

For statewide data the annual change was calculated as the slope of yearly statewide percentages, expressed in percentage points per year. For ease of interpretation, state trend values were oriented so that positive values indicated improvement and negative values indicated worsening.

Homicide analysis. Homicide data were reviewed for the period of 2016 through 2025. Homicide incident and population data were spatially analyzed using Quantum Geographic Information System (QGIS) software version 3.42.0 (QGIS Development Team, 2024). Homicide incident locations were geocoded onto digitized boundary maps representing Catchment Area 1, Catchment Area 2, and the broader Kansas City, Kansas, limits. To calculate homicide rates, 2020 U.S. Census block boundaries and associated population counts were spatially overlaid with the Kansas City, Kansas, and Catchment Area boundaries, and population counts were summed within each boundary to estimate the total KCK population (155,040), the population of KCK residents aged 10–24 (32,907), and the population of catchment area residents aged 10–24 (8357). Annual homicide rates per 100,000 residents and youth homicide rates per 100,000 residents aged 10–24 were calculated. Average homicide rates were calculated across three analytic phases aligned with the implementation timeline of the ThrYve initiative: baseline, pilot early intervention, and expanded intervention phase (see Table 6). The percentage of homicides involving guns was calculated by dividing the number of assault-related homicides with a gun-related mechanism by the total number of assault-related homicides. The denominator included all assault-related homicide mechanisms, including guns, stabbing, blunt force, and other assault mechanisms. Percentages were calculated for youth and adult homicides and for Catchment Area 1.

Table 6. ThrYve project phases and analytic time periods.

Time Period	Project Phase	Phase Description
2016–2017	Baseline	Period prior to the formal start of the ThrYve initiative.
2018–2021	Pilot and Early Intervention	Formation of the ThrYve Collaborative, completion of collaborative assessment and planning activities, identification of priority change levers, and implementation of initial strategies supported by HHS pilot funding.
2022–2025	Expanded Intervention	Fuller implementation of ThrYve approach components, expansion into additional catchment areas, and expanded implementation supported by CDC funding.

3. Results

3.1. Community Changes

From 2018 to 2024, the ThrYve coalition implemented 243 community changes in alignment with the identified change lever strategies. Figure 4 displays the cumulative community changes during the study period. Community changes were implemented at an overall steady rate except for the rate increase seen in 2020 at the start of the COVID-19 pandemic.

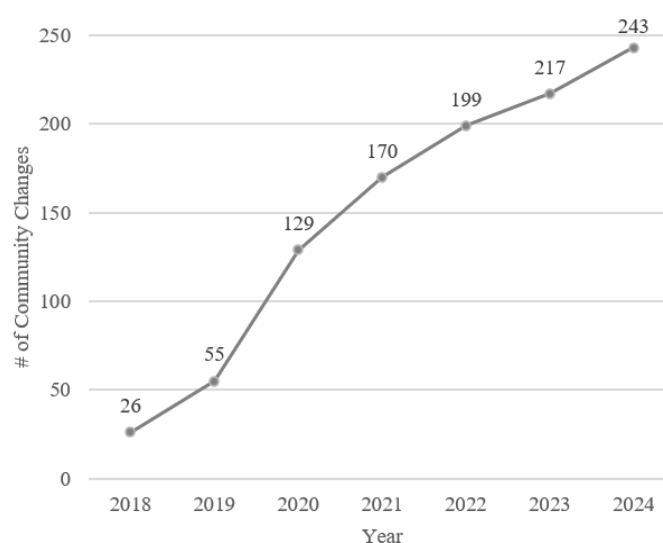
**Figure 4.** Cumulative community changes facilitated by the ThrYve coalition from 2018 to 2024.

Table 7 presents the characterization of the 243 documented community changes by structural and social determinants, youth violence risk factor, and socio-ecological level. The largest proportion of changes addressed social and community context (40.7%), followed by structural systems (22.6%). Among youth violence risk factors, community laws and norms favorable toward drug use, guns, and crime accounted for the greatest share of change (34.2%), followed closely by community disorganization (31.7%). At the socio-ecological level, most changes targeted community-level conditions (69.5%), with fewer changes targeting individual-level factors (23.0%). There was some variation observed across categories from year to year (see Table 7), with some annual increases over time.

Table 7. Percent distribution of community changes by structural and social determinants, risk factor, and socio-ecological level.

Year	2018	2019	2020	2021	2022	2023	2024	All Years
Percent Distribution (%)								
Structural and Social Determinants								
<i>Structural Determinants</i>								
Cultural Determinants	0.0	0.0	9.5	2.4	6.9	0	26.9	7.0
Political Determinants	0.0	0.0	0.0	7.3	6.9	5.6	7.7	3.3
Structural Systems	15.4	13.8	25.7	34.1	31.0	5.6	15.4	22.6
<i>Social Determinants</i>								
Economic Stability	11.5	3.4	5.4	4.9	3.4	16.7	3.8	6.2
Educational Access and Quality	19.2	6.9	8.1	4.9	3.4	5.6	0.0	7.0
Healthcare Access and Quality	7.7	13.8	8.1	2.4	3.4	5.6	11.5	7.4
Neighborhood and Built Environment	3.8	3.4	6.8	7.3	6.9	11.1	0.0	5.8
Social and Community Context	42.3	58.6	36.5	36.6	37.9	50	34.6	40.7
Risk Factors								
Community Disorganization	34.6	34.5	25.7	48.8	24.1	38.9	19.2	31.7
Community Laws and Norms Favorable Toward Drug Use, Guns and Crime	19.2	31.0	39.2	36.6	17.2	22.2	61.5	34.2
Early Initiative of Antisocial Behavior	0.0	0.0	0.0	0.0	10.3	0.0	0.0	1.2
Extreme Economic and Social Deprivation	3.8	0.0	4.1	2.4	0.0	0.0	0.0	2.1
Family Management Problems	0.0	0.0	0.0	0.0	0.0	5.6	0.0	0.4
Favorable Attitude Toward Antisocial Behavior	26.9	24.1	13.5	12.2	24.1	27.8	11.5	18.1
Friends Who Engage in Problem Behavior	3.8	0.0	2.7	0.0	0.0	0	0.0	1.2
Lack of Commitment to School	11.5	3.4	10.8	0.0	10.3	5.6	0.0	6.6
Media Portrayals of Violence	0.0	6.9	4.1	0.0	6.9	0.0	7.7	3.7
Parental Attitude Toward Antisocial Behavior	0.0	0.0	0.0	0.0	6.9	0.0	0.0	0.8
Socio-ecological Level								
Individual	34.6	27.6	21.6	9.8	27.6	38.9	15.4	23.0
Relationship	7.7	10.3	1.4	2.4	6.9	5.5	0	4.1
Community	57.7	62.1	75.7	78.0	58.6	55.6	80.8	69.6
Societal	0.0	0.0	1.4	9.8	6.9	0.0	3.8	3.2
<i>n</i>	26	29	74	41	29	18	26	243

3.2. ThrYve Youth Participant Outcomes

On average, youths participated in the study for 643 days, with a median of 588 days and a range of 63 to 1743 days. Among ThrYve participants who attended out-of-school-time programming, paired-samples proportions tests indicated differences across several risk factors from pretest to post-test (see Table 8). Among students with matched pre/post data, the median interval between assessments was 373 days ($IQR = 349\text{--}624$; mean = 517 days; range = 63–1994 days). Three risk factor variables demonstrated statistically significant improvement from pretest to post-test, including laws and norms favorable to drug use ($p = 0.003$), poor family management ($p = 0.033$), and interaction with antisocial peers ($p = 0.042$). Two risk factors showed no statistically significant change, with low neighborhood attachment at $p = 0.564$ and peer-individual antisocial behavior at $p = 0.602$. One risk factor worsened over time, with the proportion of youth classified as at risk for high community disorganization increasing from pretest to post-test, $p = 0.047$.

Table 9 presents participant pre–post changes alongside statewide annual trend data for descriptive context. Participants showed significant decline in community disorganization (−9.2 percentage points), consistent with a statewide trend (−2.33 percentage points per year). No meaningful change was observed for low neighborhood attachment among participants (−2.8 percentage points), and statewide estimates were essentially stable (0.01 percentage points per year). Participants also showed significant improvement in laws and norms favorable to drug use (16.2 percentage points), and statewide

estimates indicated improvement for this factor as well (1.26 percentage points per year). Participants showed significant improvement in poor family management (9.2 percentage points), whereas statewide estimates suggested slight worsening (−0.14 percentage points per year). Although participant improvement in peer–individual antisocial behavior was not statistically significant (2.1 percentage points), statewide estimates indicated worsening (−2.40 percentage points per year). Participants also showed significant improvement in interaction with antisocial peers, consistent with a statewide improvement trend (0.35 percentage points per year).

Table 8. Pre- to post-intervention changes in the proportion of participants classified as at risk.

Risk Factor	Pre at Risk <i>n</i> / <i>N</i> (Proportion)	Post at Risk <i>n</i> / <i>N</i> (Proportion)	Difference (Pre – Post)	McNemar <i>p</i>	Direction of Change
High community disorganization	102/141 (0.723)	115/141 (0.816)	−0.092	0.047	Significant worsening
Low neighborhood attachment	79/141 (0.560)	83/141 (0.589)	−0.028	0.564	No significant change
Laws and norms favorable to drug use	68/142 (0.479)	45/142 (0.317)	0.162	0.003	Significant improvement
Poor family management	50/142 (0.352)	37/142 (0.261)	0.092	0.033	Significant improvement
Peer–individual antisocial behavior	30/144 (0.208)	27/144 (0.188)	0.021	0.602	No significant change
Interaction with antisocial peers	77/144 (0.535)	64/144 (0.444)	0.090	0.042	Significant improvement

Note. The *n* reported for each risk factor reflects participants with valid paired pre- and post-survey data for that measure.

Table 9. Contextual comparison of participant risk factor change and statewide risk factor trends.

Risk Factor	ThrYve Participants' Change Scores, Percentage Points (Pre – Post)	Kansas State Annual Linear Slope, Percentage Points Per Year (2018–2025) ¹
High community disorganization	−9.2 †	−2.33
Low neighborhood attachment	−2.8	0.01
Laws and norms favorable to drug use	16.2 †	1.26
Poor family management	9.2 †	−0.14
Peer–individual antisocial behavior	2.1	−2.40
Interaction with antisocial peers	9.0 †	0.35

Note. Participants' change scores and Kansas state trend values were oriented so that positive values indicate improvement, or reduced risk, and negative values indicate worsening, or increased risk. ¹ Kansas state values reflect annual percentage point change from 2018 to 2025. † Statistically significant at *p* < 0.05.

3.3. Homicide Outcomes

Homicide rates generally declined from baseline to the intervention phase, although patterns differed by age group and geography (Table 10). In high school Catchment Area 1, the youth homicide rate decreased from 77.8 per 100,000 at baseline to 44.9 during intervention, while the all-ages or overall homicide rate declined from 58.5 to 30.0. In Kansas City, Kansas, the youth homicide rate increased slightly during early intervention (2018–2021), from 36.5 to 38.7, before declining to 28.9 during expanded intervention (2022–2025).

Guns accounted for a substantial majority of homicides across the study period. From 2016 to 2025, approximately 88.4% of all homicides and 92.0% of youth homicides in Kansas City, Kansas, were gun-related. A similar pattern was observed in Catchment Area 1, where

85.9% of all homicides and 89.1% of youth homicides involved guns. Method or weapon information was missing for 6.8% of homicide records.

Table 10. Homicide rates and change from baseline by geography, age group, and implementation period.

Years	Project Phase	Rate per 100,000 Youth/Residents (Δ Baseline Rate)			
		Catchment Area 1		Kansas City, KS	
		Ages 10–24	All Ages	Ages 10–24	All Ages
2016–2017	Baseline	77.8	58.5	36.5	56.8
2018–2021	Pilot and Early Intervention	53.8 (–23.9)	54.8 (–3.7)	38.7 (+2.3)	29.5 (–27.3)
2022–2025	Expanded Intervention	44.9 (–32.9)	30.0 (–28.5)	28.9 (–7.6)	17.4 (–39.4)

Note. Rates were calculated using the population denominator for the corresponding age group and geographic area.

Historically, youth homicide rates in high school Catchment Area 1 were disproportionately higher than the overall homicide rates across geographies. The gap between youth and all-ages homicide rates narrowed in high school Catchment Area 1, decreasing from 19.3 per 100,000 at baseline to 14.9 per 100,000 during the intervention phase. The gap between the Catchment Area 1 and Kansas City, Kansas, youth homicide rates narrowed from 41.3 per 100,000 at baseline to 16.0 per 100,000 during the intervention phase.

Annual homicide rates varied across years for both Catchment Area 1 and Kansas City, KS. In Catchment Area 1, the youth homicide rate peaked in 2019 at 95.7 per 100,000, then declined during the COVID-19 pandemic period to 47.9 per 100,000 in 2020. Kansas City, KS, reached its peak youth homicide rate in 2020, at 57.7 per 100,000.

Before the expansion of youth programming into Catchment Area 2, the average homicide rate from 2016 to 2022 was 57.1 per 100,000 among youths aged 10–24 and 33.2 per 100,000 among residents of all ages. Following the expansion of youth programming, the average homicide rate from 2023 to 2025 decreased to 23.0 per 100,000 among youths aged 10–24, a change of –34.1 per 100,000 from baseline. Among residents of all ages, the average homicide rate decreased to 14.9 per 100,000, a change of –18.3 per 100,000 from baseline. For Catchment Area 2, 90.3% of all homicides and 94.1% of youth homicides were gun-related.

4. Discussion

This study evaluated the ThrYve initiative, a comprehensive youth violence prevention strategy guided by the Institute of Medicine’s framework for collaborative action. By targeting both individual-level risk factors and broader community conditions, the ThrYve initiative worked to shape interrelated risk factors across peer, family, school, neighborhood, and broader structural contexts. Accordingly, the initiative sought to address both proximal risk factors and broader social and structural conditions associated with violence through a community-engaged, cross-sector approach.

Community Changes. Through a structured and collaborative action-planning process, the ThrYve coalition identified and implemented change lever strategies, resulting in the corresponding facilitation of community changes. This collaborative process strengthened the coalition’s organizational capacity and improved its ability to carry out meaningful community and systems-level changes. ThrYve’s increased capacity was especially evident at the onset of the COVID-19 pandemic, when the coalition continued to respond to community needs and accelerated the rate of community changes despite lockdowns and social restrictions. The rapid mobilization response highlights the coalition’s strengthened ability to adapt effectively to evolving community contexts.

The characterization of the community changes that were implemented during the study period provides evidence that the ThrYve Collaborative was actively targeting the

broader social and structural conditions and risk factors identified to influence youth violence locally. There was a concentrated effort to address both broader social and structural conditions, particularly structural systems and social and community contexts, as well as key risk factors, including community disorganization and community norms favorable toward drug use, guns, and crime.

As new change levers were implemented, the facilitation of a series of multiple interrelated community changes was required. These clusters of related community changes can be seen as variations across the categories characterizing community change. For example, the higher proportion of community changes categorized as cultural determinants in 2024 were related to a youth-supported norms campaign advanced through the Youth Advisory Board. This change lever included multiple new programs and practices, including a Youth Voices in Change forum, participation in a national Youth Violence Prevention Center podcast, and a violence prevention billboard campaign featuring youth-designed billboards.

ThrYve Youth Participant Outcomes. Overall, the ThrYve initiative indicated improved outcomes, reflected in reduced proportions of participants classified as at risk on four of the six measured risk variables, suggesting an overall improved risk profile among ThrYve participants over time. Statistically significant reductions in risk were observed for laws and norms favorable to drug use, poor family management, and interaction with antisocial peers. When considered alongside the community change findings, these results suggest that ThrYve's multilevel approach may have started to contribute to some improvements in both community conditions and youth-level risk.

Additionally, these findings are consistent with the emphasis of the ThrYve intervention on youth empowerment and positive youth development. Through structured out-of-school programming, youth leadership opportunities, family engagement, and relationship-centered or pro-bonding activities, ThrYve sought to increase youth connection to prosocial peers and supportive adults. These strategies may help explain the observed reductions in interaction with antisocial peers and poor family management, while the initiative's focus on positive norms, conflict resolution, and youth decision-making may relate to reductions in laws and norms favorable to drug use. The results provide preliminary support for the idea that youth violence prevention efforts may influence risk by building connections, agency, and supportive relationships.

Community disorganization increased significantly from pre- to post-assessment. When examined alongside statewide data, this trend was consistent with broader patterns of worsening trends at the state level. One possible explanation is that the disruption associated with the COVID-19 pandemic may have intensified neighborhood instability and disorder. Given that community disorganization captures perceptions of safety, crime, and environmental health, worsening scores during a period of elevated violence are consistent with prior evidence that exposure to violence can erode perceptions of safety, weaken social cohesion, and disrupt community functioning within schools and neighborhoods (Sampson et al., 1997; Sharkey, 2018). There is a need to further explore how youths perceive community disorganization, including whether responses reflect immediate neighborhood conditions, broader city-level concerns, or general perceptions of safety, disorder, and community instability during the pandemic period.

Although improvement in peer and individual antisocial behaviors was not statistically significant, the direction of change among participants was favorable, whereas in comparison, statewide estimates showed worsening over time. This may indicate that the intervention helped buffer against a broader negative trend. Similarly, improvement in poor family management may be meaningful given that the statewide trend showed slight worsening, suggesting that ThrYve may have supported protective family processes during a time of social disruption.

Homicide Outcomes. There was evidence that broader contextual factors influenced homicide outcomes. Overall homicide rates in Kansas City, Kansas, may have been influenced by the COVID-19 pandemic and the 2020 shelter-in-place orders, when many structured environments, including schools, community centers, and businesses, were no longer consistently accessible to residents. During this period, the ThrYve initiative also had to adapt its support for youths by shifting programming to a virtual format, working with the school district to support internet access, and modifying life-skills activities for remote participation, such as delivering food supplies so youths could participate in virtual cooking classes. Against this backdrop, homicide rates reached their peak for the study period in 2020. Encouragingly, both youth and all-age homicide rates generally declined after the pandemic-period peak, coinciding with the return of schools, community programs, and other structured settings to in-person operations, and remained lower than peak levels throughout the remainder of the study period.

During the COVID-19 pandemic, homicide rates increased in Kansas City, across Kansas, and nationally. In contrast, youth homicide rates in Catchment Area 1 declined from their 2019 high during the early pandemic period, a pattern that differed from trends observed in the city, state, and nation. Catchment Area 1 was selected for the intervention due to its elevated youth homicide rates prior to implementation. Focusing on a priority neighborhood and school community allowed ThrYve to concentrate supports among youths living in an area with greater exposure to violence-related risk. The catchment area showed a different pattern than Kansas City, Kansas, overall. Youth homicide rates in the catchment area peaked in 2019 and generally declined thereafter, including during the pandemic period. After the baseline phase, the disproportionate burden of homicide among youths and within the catchment area appeared to lessen. The gap between Catchment Area 1 and Kansas City, Kansas, narrowed, as did the gap between youth homicide rates and all-age homicide rates. Youth participant enrollment and programming expanded into Catchment Area 2 in 2023. Similar to the trend observed in Catchment Area 1, the youth homicide rate in Catchment Area 2 was elevated relative to Kansas City before expansion and showed a greater reduction in the years following expansion.

Limitations and Future Research

Several limitations should be considered when interpreting these findings. The quasi-experimental, community-based design limits causal inference, as observed changes in outcomes cannot be attributed solely to the intervention. Broader contextual factors, including secular trends, concurrent initiatives, and changes associated with the COVID-19 pandemic, may also have influenced results. Additionally, community and systems change processes often unfold gradually and may not be fully captured by available indicators. Likewise, there may be a delay experienced in improvements in risk factors and impacts in population-level outcomes like homicides.

For the individual-level outcomes, several features of the participant sample, available data, and implementation context are important to note. Because youth participants were selected based on elevated risk, the findings may not generalize to broader youth populations. Variation in intervention exposure, including differences in attendance and participation length, may have shaped outcomes in ways that were not fully captured in the analysis. Future analyses should examine exposure, duration of participation, and intensity of engagement to better understand the intervention components associated with changes in risk and protective factors. Furthermore, because the individual-level analysis did not include a comparison group, the changes observed cannot be attributed solely to program participation. There are also maturation effects such as youth age, as well as increased influence by broader contextual and community factors. Dichotomizing

risk and protective factor indicators may have reduced sensitivity to gradual change, potentially obscuring smaller improvements that did not cross the threshold used to define risk status. Finally, implementation occurred during the COVID-19 pandemic, a contextual factor that may limit generalizability. The pandemic disrupted youth routines, school access, service delivery, community mobility, economic conditions, and patterns of violence. These disruptions may have affected both how the intervention was implemented and the outcomes observed.

The ThrYve initiative effectively reached youths within the age range and geographic area most in need of support. Facilitating the ThrYve afterschool program component in school buildings during out-of-school time provided an effective approach for engaging youths by leveraging a setting where youths were already gathered and accessible. At the same time, supporting older youths aged 19 to 24 (within the age range at an elevated risk for violence), when no longer involved in secondary school, remains an important opportunity for future prevention efforts. It is also important to note that the present study focused on the ThrYve initiative and did not comprehensively assess all violence prevention programs operating in the surrounding area. Adult-focused community violence intervention programs may have been available across the greater Kansas City metro area.

The findings from this study support the value of multilevel, multisector comprehensive approaches to youth violence prevention. Future research should continue to examine community interventions across multiple levels and include intermediary indicators that help further examine the contributions of specific strategies, such as youth engagement, collaboration, and coalition-driven systems change efforts, while also examining impacts on broader distal outcomes over time. For comprehensive interventions aimed at structural and social determinants, it may be important to monitor related distal outcomes related to risk factors addressed that are likely to shift before measurable changes in homicide rates emerge.

The primary method of lethal harm was gun violence. ThrYve initiative strategies primarily focused on positive youth development and risk-reduction supports, including conflict mediation, retaliation prevention, mentoring, leadership development, prosocial engagement, life-skills development, and other social supports for youths at elevated risk. Given the predominance of gun-related harm, future applications and evaluations of this approach may benefit from incorporating complementary strategies that promote safe gun storage and reduce youth access to guns.

Homicide is a relatively low-frequency outcome, particularly in Catchment Area 1, where small changes in the number of incidents can result in substantial year-to-year fluctuations in rates. Additionally, community-level outcomes such as homicide may have delayed effects. To reduce annual variability and align analyses with the timeline of ThrYve implementation, homicide rates were aggregated across multiple years to examine broader trends over time. Future research could build on this analysis by examining additional violence indicators, such as violent crime, gun-related offenses, nonfatal shootings, or assault-related incidents, which may provide additional understanding of changes in community violence over time.

5. Conclusions

Preventing youth gun violence requires change to the immediate socio-cultural contexts in which young people are embedded and the broader structural conditions that shape their lives. Improvements in peer- and family-related risk factors indicate that change may emerge sooner within the social environments most directly linked to youth behavior. Community-level homicide trends represent a distal indicator of change and shift more slowly than individual-level risk factors. Although there may be delayed effects,

comprehensive community interventions may support reductions in youth gun violence by enhancing community capacity and addressing underlying structural and contextual conditions that contribute to violence.

Author Contributions: Conceptualization, J.W.-T., J.A.S. and V.M.T.; Methodology, J.W.-T. and V.M.T.; Validation, J.W.-T. and K.F.; Formal Analysis, V.M.T. and K.F.; Investigation, J.W.-T., V.M.T., J.A.S., J.H., K.F. and L.B.; Data Curation, V.M.T., J.H. and K.F.; Writing—Original Draft Preparation, V.M.T. and J.W.-T.; Writing—Review and Editing, J.A.S., J.H., L.B. and K.F.; Visualization, V.M.T. and J.W.-T.; Supervision, J.W.-T.; Project Administration, J.W.-T., J.A.S. and J.H.; Funding Acquisition, J.W.-T., J.A.S. and J.H. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the Centers for Disease Control and Prevention, Department of Health and Human Services, grant number U01CE00337. The content is solely the responsibility of the authors and does not necessarily represent the official views of the funding agency.

Institutional Review Board Statement: This study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of the University of Kansas (Protocol No. STUDY00141718, approved on 16 February 2018).

Informed Consent Statement: Informed consent was obtained from all participants involved in the study. For participants under 18 years of age, parental consent and youth assent were obtained.

Data Availability Statement: The data presented in this study are available from the corresponding author upon reasonable request. Due to the inclusion of sensitive community-level and youth participant data, datasets are not publicly available.

Acknowledgments: The authors acknowledge the contributions of YVPC-KC collaborators and ThrYve Collaborative partners, especially the youth leaders involved in the ThrYve Youth Advisory Board. We also thank our colleagues at the Center of Community Health and Development.

Conflicts of Interest: The authors declare no conflicts of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

References

- Arthur, M. W., Hawkins, J. D., Pollard, J. A., Catalano, R. F., & Baglioni, A. J. (2002). Measuring risk and protective factors for substance use, delinquency, and other adolescent problem behaviors: The Communities That Care Youth Survey. *Evaluation Review*, 26(6), 575–601. [CrossRef] [PubMed]
- Bingenheimer, J. B., Brennan, R. T., & Earls, F. J. (2005). Firearm violence exposure and serious violent behavior. *Science*, 308(5726), 1323–1326. [CrossRef] [PubMed]
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.
- Buggs, S. A. L., Kravitz-Wirtz, N. D., & Lund, J. J. (2022). Social and structural determinants of community firearm violence and community trauma. *The Annals of the American Academy of Political and Social Science*, 704(1), 224–241. [CrossRef]
- Center for Gun Violence Solutions. (n.d.). *Community gun violence*. Johns Hopkins Bloomberg School of Public Health. Available online: <https://publichealth.jhu.edu/center-for-gun-violence-solutions/in-depth-community-gun-violence> (accessed on 2 March 2026).
- Centers for Disease Control and Prevention. (2023). *National violent death reporting system (NVDRS): Violent deaths report*. National Center for Injury Prevention and Control. Available online: <https://wisqars.cdc.gov/nvdrs> (accessed on 20 December 2025).
- Centers for Disease Control and Prevention. (2024a). *Risk and protective factors*. U.S. Department of Health and Human Services. Available online: <https://www.cdc.gov/youth-violence/risk-factors/index.html> (accessed on 2 March 2026).
- Centers for Disease Control and Prevention. (2024b). *WISQARS leading cause of death query system* [Data set]. U.S. Department of Health and Human Services. Available online: <https://wisqars.cdc.gov/lcd> (accessed on 20 December 2025).
- Centers for Disease Control and Prevention. (2025a, July 21). *About violence prevention*. U.S. Department of Health and Human Services. Available online: <https://www.cdc.gov/violence-prevention/about/index.html> (accessed on 2 March 2026).
- Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. (2025b, September 5). *Mapping injury, overdose, and violence dashboard*. Available online: <https://www.cdc.gov/injury-violence-data/data-vis/index.html> (accessed on 20 December 2025).
- Checkoway, B. (2011). What is youth participation? *Children and Youth Services Review*, 33(2), 340–345. [CrossRef]

- Collie-Akers, V. L., Fawcett, S. B., Schultz, J. A., Carson, V., Cyprus, J., & Pierle, J. E. (2013). Measuring progress of collaborative action in a community health effort. *Pan American Journal of Public Health/Revista Panamericana de Salud Pública*, 34(6), 422–428. [PubMed]
- Dahlgren, G., & Whitehead, M. (1991). *Policies and strategies to promote social equity in health: Background document to WHO—Strategy paper for Europe* (Arbetsrapport No. 14). Institute for Futures Studies.
- David-Ferdon, C., Vivolo-Kantor, A. M., Dahlberg, L. L., Marshall, K. J., Rainford, N., & Hall, J. E. (2023). *Youth violence prevention: Resource for action: A compilation of the best available evidence*. National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. Available online: <https://stacks.cdc.gov/view/cdc/158963> (accessed on 20 December 2025).
- Fawcett, S. B. (1991). Social validity: A note on methodological issues and effectiveness research. *Journal of Applied Behavior Analysis*, 24(2), 235–239. [CrossRef] [PubMed]
- Fawcett, S. B., Grassmeyer, K., Schultz, J., Berkowitz, B., Holt, C., & Rabinowitz, P. (2005). *Community tool box curriculum: Promoting community health and development. A 16-module curriculum for building core competencies in promoting community health and development*. University of Kansas.
- Fawcett, S. B., Mathews, R. M., & Fletcher, R. K. (1980). Some promising dimensions for behavioral community technology. *Journal of Applied Behavior Analysis*, 13(3), 505–518. [CrossRef] [PubMed]
- Fawcett, S. B., Schultz, J. A., Watson-Thompson, J., Fox, M. H., & Bremby, R. (2010). Building multisectoral partnerships for population health and health equity. *Preventing Chronic Disease*, 7(6), A118. Available online: https://www.cdc.gov/pcd/issues/2010/nov/10_0079.htm (accessed on 20 December 2025). [PubMed]
- Gard, A. M., Brooks-Gunn, J., McLanahan, S. S., Mitchell, C., Monk, C. S., & Hyde, L. W. (2022). Deadly gun violence, neighborhood collective efficacy, and adolescent neurobehavioral outcomes. *PNAS Nexus*, 1(3), pgac061. [CrossRef] [PubMed]
- Harding, D. J. (2009). Collateral consequences of violence in disadvantaged neighborhoods. *Social Forces*, 88(2), 757–784. [CrossRef] [PubMed]
- Harper, C. R., Li, J., Sheats, K., Hertz, M. F., Merrill-Francis, M., Friar, N. W., Ashley, C. L., Shanklin, S., Barbero, C., Gaylor, E. M., & Hoots, B. E. (2023). Witnessing community violence, gun carrying, and associations with substance use and suicide risk among high school students—Youth Risk Behavior Survey, United States, 2021. *MMWR Supplements*, 72(1), 22–28. [CrossRef] [PubMed]
- Hawkins, J. D., Catalano, R. F., & Arthur, M. W. (2002). Promoting science-based prevention in communities. *Addictive Behaviors*, 27(6), 951–976. [CrossRef] [PubMed]
- Hawkins, J. D., Oesterle, S., Brown, E. C., Abbott, R. D., & Catalano, R. F. (2014). Youth problem behaviors 8 years after implementing the Communities That Care prevention system: A community-randomized trial. *JAMA Pediatrics*, 168(2), 122–129. [CrossRef] [PubMed]
- Heller, J. C., Givens, M. L., Johnson, S. P., & Kindig, D. A. (2024). Keeping it political and powerful: Defining the structural determinants of health. *The Milbank Quarterly*, 102(2), 351–366. [CrossRef] [PubMed]
- Institute of Medicine. (2003). The community. In Institute of Medicine (Ed.), *The future of the public's health in the 21st century*. National Academies Press.
- Jennings, L. B., Parra-Medina, D. M., Hilfinger-Messias, D. K., & McLoughlin, K. (2006). Toward a critical social theory of youth empowerment. *Journal of Community Practice*, 14(1–2), 31–55. [CrossRef]
- Kansas Communities That Care. (2026). *Kansas communities that care student survey: Core survey question items, English*. Available online: https://kctcdata.org/wp-content/uploads/2022/06/KCTC-Student-Survey-Question-Items_Core-Survey_English.pdf (accessed on 10 May 2026).
- Kansas Health Matters. (2026, July 24). *Age-adjusted firearm-related death rate by county—Wyandotte county*. Kansas Health Matters.
- Kingston, B. E., Mattson, S. A., Little, J. S., Steeger, C. M., Sigel, E. J., Carrillo, U. L., Bechhoefer, D., Argamaso, S., & D’Inverno, A. (2026). Effects of the Communities That Care (CTC) prevention system on youth violence outcomes in two violence-impacted Denver communities. *American Journal of Criminal Justice*, 51, 281–308. [CrossRef] [PubMed]
- Kingston, B. E., Zimmerman, M. A., Wendel, M. L., Gorman-Smith, D., Wright-Kelly, E., Mattson, S. A., & Trudeau, A. R. T. (2021). Developing and implementing community-level strategies for preventing youth violence in the United States. *American Journal of Public Health*, 111(S1), S20–S24. [CrossRef] [PubMed]
- McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education Quarterly*, 15(4), 351–377. [CrossRef] [PubMed]
- McNemar, Q. (1947). Note on the sampling error of the difference between correlated proportions or percentages. *Psychometrika*, 12(2), 153–157. [CrossRef] [PubMed]
- Messman, E., Scott, B., Smith-Darden, J., Cortina, K., Thulin, E., Zimmerman, M., & Kernsmith, P. (2022). Psychological empowerment as a route for positive adjustment during adolescence. *Journal of Applied Developmental Psychology*, 83, 101458. [CrossRef] [PubMed]
- National Academies of Sciences, Engineering, and Medicine. (2023). *Closing the opportunity gap for young children*. The National Academies Press. [CrossRef] [PubMed]

- Office of Disease Prevention and Health Promotion. (n.d.). *Social determinants of health*. Healthy People 2030. U.S. Department of Health and Human Services. Available online: <https://odphp.health.gov/healthypeople/priority-areas/social-determinants-health> (accessed on 20 December 2025).
- QGIS Development Team. (2024). *QGIS geographic information system* (Version 3.34.5-Prizren) [Computer software]. QGIS Association. Available online: <https://www.qgis.org> (accessed on 20 December 2025).
- Rajan, S., Branas, C. C., Myers, D., & Agrawal, N. (2019). Youth exposure to violence involving a gun: Evidence for adverse childhood experience classification. *Journal of Behavioral Medicine*, 42(4), 646–657. [CrossRef] [PubMed]
- Roussos, S. T., & Fawcett, S. B. (2000). A review of collaborative partnerships as a strategy for improving community health. *Annual Review of Public Health*, 21, 369–402. [CrossRef] [PubMed]
- Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science*, 277(5328), 918–924. [CrossRef] [PubMed]
- Schmidt, C. J., Rupp, L., Pizarro, J. M., Lee, D. B., Branas, C. C., & Zimmerman, M. A. (2019). Risk and protective factors related to youth firearm violence: A scoping review and directions for future research. *Journal of Behavioral Medicine*, 42(4), 706–723. [CrossRef] [PubMed]
- Schober, D. J., Fawcett, S. B., & Bernier, J. (2012). The enough abuse campaign: Building the movement to prevent child sexual abuse in Massachusetts. *Journal of Child Sexual Abuse*, 21(4), 456–469. [CrossRef] [PubMed]
- Schultz, J. A., Fawcett, S. B., Holt, C. M., & Watson-Thompson, J. (2020). Strengthening collaborative action for community health and development. *American Journal of Health Studies*, 35(2), 152–169. [CrossRef]
- Sharkey, P. (2018). *Uneasy peace: The great crime decline, the renewal of city life, and the next war on violence*. W.W. Norton & Company.
- Shulman, E. P., Beardslee, J., Fine, A., Frick, P. J., Steinberg, L., & Cauffman, E. (2021). Exposure to gun violence: Associations with anxiety, depressive symptoms, and aggression among male juvenile offenders. *Journal of Clinical Child & Adolescent Psychology*, 50(3), 353–366. [CrossRef] [PubMed]
- Thompson, T., Jr., & Massat, C. R. (2005). Experiences of violence, post-traumatic stress, academic achievement and behavior problems of urban African-American children. *Child and Adolescent Social Work Journal*, 22(5–6), 367–393. [CrossRef]
- Thompson, V. M., Watson-Thompson, J., Bernard, D. L., & Bah, L. (2025). Addressing structural factors to prevent youth violence through a multisector collaborative approach. *Prevention Science*. [CrossRef] [PubMed]
- Unified Government of Wyandotte County. (2023). *Community health assessment: 2022 full report*. Available online: <https://www.wycokck.org/files/content/public/v/17/departments/health/community-health/community-health-assessment/cha-full-report.pdf> (accessed on 8 July 2026).
- United States Census. (2020). *Wyandotte County, Kansas*. United States Census Bureau. Available online: https://data.census.gov/profile/Wyandotte_County,_Kansas?g=050XX00US20209 (accessed on 20 December 2025).
- U.S. Congress Joint Economic Committee. (2019). *A state-by-state examination of the economic costs of gun violence*. Available online: https://www.jec.senate.gov/public/_cache/files/b2ee3158-aff4-4563-8c3b-0183ba4a8135/economic-costs-of-gun-violence.pdf?utm_source=chatgpt.com (accessed on 1 May 2026).
- Wallerstein, N., & Duran, B. (2006). Using community-based participatory research to address health disparities. *Health Promotion Practice*, 7(3), 268–276. [CrossRef] [PubMed]
- Watson-Thompson, J., Fawcett, S. B., & Schultz, J. A. (2008). A framework for community mobilization to promote healthy youth development. *American Journal of Preventive Medicine*, 34(3), S72–S81. [CrossRef] [PubMed]
- Watson-Thompson, J., Jessop, N., Hassaballa, I., Vanchy, P., Henderson, J., & Moore, C. (2020). Together Helping Reduce Youth Violence for Equity (ThrYve): Examining the development of a comprehensive multisectoral approach to youth violence prevention. *American Journal of Community Psychology*, 66(3–4), 244–255. [CrossRef] [PubMed]
- Watson-Thompson, J., May, M. J., Jefferson, J., Young, Y., Young, A., & Schultz, J. A. (2017). Examining the contributions of a community coalition in addressing urban health determinants. *Journal of Prevention and Intervention in the Community*, 46(1), 7–27. [CrossRef] [PubMed]
- Woolf, S. H. (2017). Progress in achieving health equity requires attention to root causes. *Health Affairs*, 36(6), 984–991. [CrossRef] [PubMed]
- World Health Organization. (n.d.). *Social determinants of health*. Available online: <https://www.who.int/health-topics/social-determinants-of-health> (accessed on 12 January 2026).
- Zimmerman, M. A., Eisman, A. B., Reischl, T. M., Morrel-Samuels, S., Stoddard, S., Miller, A. L., Hutchison, P., Franzen, S., & Rupp, L. (2018). Youth Empowerment Solutions: Evaluation of an after-school program to engage middle school students in community change. *Health Education & Behavior*, 45(1), 20–31. [CrossRef] [PubMed]

Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.