



# Evaluation of a police training on de-escalation with trauma-exposed youth

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This study reports the development and evaluation of a police training workshop on de-escalating situations with trauma-exposed youth. The training was developed using a participatory action framework, with the goal of increasing knowledge of adolescent development and the impact of trauma, and promoting skills for de-escalating situations with adolescents. A mixed methods study was conducted to explore the effectiveness of the workshop. Participants were 98 current police officers and recruits. Following the training, knowledge about adolescents and self-efficacy for dealing with adolescents increased, and anxiety about working with adolescents decreased. Open-ended responses indicated that the training was well received. A brief intervention can promote police officers' knowledge of adolescents, self-efficacy, and ease in interacting with adolescents. Future research should build on these findings to determine if these changes lead to a decrease in the use of force in interactions with adolescents.

## 1. Introduction

About 31 million adolescents in the United States are under juvenile court jurisdiction, and over 80% of those referrals are initiated by law enforcement officers (Hockenberry and Puzanchera, 2019). Many developmental factors unique to adolescence increase the likelihood that youth ages 10–24 will engage in delinquent behavior (Somerville et al., 2010). These delinquent behaviors, in turn, increase the likelihood that youth will come into contact with law enforcement, and through law enforcement, the justice system. However, U.S. police officers often do not receive specific training on adolescents and their development, despite the high frequencies of interactions with youth (C. Graves, personal communication, October 15, 2018). Training law enforcement officers on adolescent development and on specific tactics to de-escalate encounters with adolescents, especially trauma-exposed adolescents, may decrease the amount of referrals made to the justice system as well as increase community trust and satisfaction with law enforcement. Equipping law enforcement officers to engage effectively with youth could provide both law enforcement officers and youth with meaningful, potentially pivotal interactions. There is currently little research on brief trainings that could increase officers' knowledge about adolescent development and their capacity to de-escalate situations with trauma-exposed adolescents through collaborative interactions. The purpose of this study was to provide a pilot test of an adolescent behavior and conflict de-escalation training. This training was developed in a collaboration between law enforcement officers in a medium-sized, urban police department in the southeastern U.S. and developmental and clinical psychologists.

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### 1.1. Youth contact with law enforcement

Adolescence is a critical developmental stage marked by rapid physical, cognitive, and social-emotional changes (Crosby et al., 2009; Lawrence et al., 2009). There is no universally agreed upon age range for “youth;” for the purposes of this work, we define youth as the ages from prepubescence (approximately 10 years old) to emerging adulthood, around 24 years old. The social and cognitive changes that take place during these ages increase the likelihood that youth may engage in delinquent behaviors. Socially, the onset of adolescence is a time of developing autonomy and exploring boundaries around independence, including limit-testing. Additionally, compared to younger children, youth spend less time with parents and more time in groups of peers engaging in peer-led (instead of adult-sanctioned) behaviors. Within this context, youth also increasingly prioritize peer relationships and approval and hold normative expectations around experimentation with sexual behavior and substance use (e.g., Arnett, 2014; Sumter et al., 2009).

Cognitively, youth comprises a sensitive period for brain development (Dow-Edwards et al., 2019). Limited cognitive processes in adolescence include working memory, processing complex tasks, planning and judgment, and inhibitory control (Dow-Edwards et al., 2019; Luna et al., 2010; Wahlstrom et al., 2010). In addition, during this time, different regions of the brain develop at different rates (Dow-Edwards et al., 2019), a non-linear process that may be inconsistent with adult expectations for youth capacities. Combined with an emotional orientation towards sensation-seeking and immediate gratification and a social structure that provides limited adult supervision, youths’ poor judgment, planning, and inhibitory control may result in behaviors that are illegal, disruptive, or dangerous (e.g., Moffitt, 2003).

Given the higher frequency of delinquent behaviors among adolescents and emerging adults, it is not surprising they have higher odds of coming into contact with the police. Based on national data collected by the Department of Justice, which included only persons above the age of 16, people between the ages of 18 and 24 experienced the highest prevalence of interacting with the police (27%) and the highest prevalence of police-initiated contact (19%; Davis et al., 2018). Of note, officers may be proportionately more likely to sustain injuries when interacting with youth in this age group. Between 2011 and 2015, 24% of officer injuries with a known perpetrator were committed by 18- to 24-year-old suspects (Federal Bureau of Investigation, 2016). This compares to less than 5% committed by youth under 18 years old and 22% committed by 25–30 year olds, with a drop to 14% committed by 31–35 year olds, and a continual subsequent decrease as age group increases. It is unclear whether this is a result of higher police contacts with youth between 18 and 24 years old, or for other reasons.

The likelihood of illegal, disruptive, or risky behaviors is even higher among youth who have been exposed to adversity and trauma. For example, a large body of research has found that exposure to community violence predicts increases in antisocial, delinquent, and aggressive behavior among youth (Overstreet, 2000). In a review, Stein et al. (2003) found that exposure to violence was consistently linked to association with deviant peers, involvement in criminal behavior, and arrest history. Early adversity, including maltreatment, victimization, and exposure to violence, has been linked longitudinally to substance use, such as alcohol use, smoking, and use of other drugs (e.g., Cisler et al., 2011; Schwab-Stone et al., 1995; Sullivan et al., 2007). All of these behaviors among youth who have been traumatized will increase the likelihood that they will interact with police officers.

Unfortunately, youths’ adult-like appearance may cause officers to overestimate their capacity to engage in adaptive decision-making, respond safely to officer intervention, and understand the risks of their behaviors. Furthermore, youth who have been traumatized have even less emotion regulation capacity in high-intensity situations, such as interactions with police officers (e.g., Marusak et al., 2015). Officers responding to incidents in high-crime areas may be more likely to perceive youth of color, particularly Black youth, as threats due to stereotypes about Black boys and men, increasing the likelihood that police officers will act with force (e.g., Amodio et al., 2014; Todd et al., 2016). Thus, youths’ emotion dysregulation, poor judgment, and challenges in adaptive decision-making may be misinterpreted as angry aggression and lead to unanticipated consequences (e.g., Correll et al., 2002). These risks are exacerbated by exposure to chronic trauma, creating a trajectory in which youth grow up in overburdened, underresourced communities, come into contact with law enforcement, and have increasing involvement in the justice system (Sampson, 2012). Without skilled and knowledgeable police officers, youths’ interaction with police can quickly escalate, resulting in officer use of force and referral to the justice system, and creating a cycle of loss and mistrust between law enforcement and the communities they serve.

### 1.2. Police responses to youth behaviors

The police are placed in a pivotal position, such that they have the opportunity to create safety and order for vulnerable youth, through engaging in meaningful interactions and by identifying and referring youth in need of services (Marans and Hahn, 2017). Organizations such as the International Association of Chiefs of Police (IACP) and the American Bar Association have issued specific standards related to police handling of juvenile problems (e.g., Bittner and Krantz, 1996; International Association of Chiefs of Police). These standards acknowledge that there is a great deal of officer discretion involved in police handling of situations, and encourage officers to provide the least restrictive response and to avoid the formal justice process unless alternatives are not appropriate or not available (Bittner and Krantz, 1996). “Least restrictive response” refers to the use of force continuum, which ranges from no force (officer presence and nonthreatening demeanor) to lethal force (National Institute of Justice, 2009). For the purpose of this study, we define use of force as the use of physical force, restraints, arrests and formal processing, lethal or nonlethal weapons, and threats to use physical force or weapons. The IACP has encouraged police departments to train officers on adolescent development and on interacting with adolescents using methods designed to build rapport and de-escalate situations in order to reduce the introduction of youth to the formal adjudication process (IACP, n.d.).

In general, the heightened focus on reducing formal charges and use of force against youth has had an impact; juvenile court cases (82% of which are referred by law enforcement officers) were reduced by 42% from 2005 to 2014 (Hockenberry and Puzanchera,

2019). When officers are not adequately prepared for interacting with youth, it is possible that some biases may emerge. For example, officers may have specific attitudes about adolescents that increase the likelihood of use of force. In one study, 76% of officers endorsed a belief that adolescents who disrespected officers should be taken into custody (Allen, 2005). Unfortunately, youth are more likely to be disrespectful during interactions with police than are adults (Brown et al., 2009). Younger age predicts a higher likelihood of punitive action, such as arrest and use of force, on the part of the police, and being disrespectful predicts higher rates of arrest among youth (Brown et al., 2009; Terrill and Mastrofski, 2002).

### 1.3. Justice system disparities for youth of color

Pre-existing attitudes about youth may particularly disadvantage youth of color. According to some reports, Black youth were twice as likely as White youth to have interactions with police officers (Crutchfield et al., 2009). Although younger age predicts higher likelihood of arrest for both White and Black youth, younger age (juvenile vs. adult) increases the risk of arrest during police encounters 1.7 times for White youth, compared to 3.8 times for Black youth (Brown, 2005). When youth are arrested, youth of color may experience disproportionately more severe outcomes. The previously mentioned reduction in juvenile court cases was weaker for Black youth (37%) than for White youth (48%). In addition, when referred to juvenile court, Black youth were more likely to be detained than were White youth, and that was true across different types of offenses (Hockenberry and Puzanchera, 2019). In general, this pattern results in Black youth having the highest rates of involvement in the juvenile justice system. Despite the fact that they comprise only 16% of U.S. youth, Black youth comprise 30% of juvenile court referrals and 58% of youth who enter into adult state prisons (youth.gov, n.d.).

### 1.4. Police trainings to improve police-youth interactions

Currently, there is a consensus about the need for de-escalation training for police officers (Engel et al., 2020; Morin et al., 2017), although de-escalation is generally poorly defined (Todak and James, 2018). For the purposes of this study, de-escalation has two meanings: (1) officers' behavioral choice to not use force or their downward progression along the use-of-force continuum; and (2) officers' use of non-coercive strategies to assist people in reducing their agitation, unsafe behaviors, or interpersonal conflict. Given that use of force precipitates formal entry into the justice system, use of force and adjudication are interdependent. Therefore, de-escalation can play a key role in reducing disproportionate minority contact. The Office of Juvenile Justice and Delinquency Prevention endorses in-service training as a strategy to reduce disproportionate minority contact among youth (LaMotte et al., 2010), yet there is no gold standard, evidence-based approach for such training. In fact, the sheer breadth of training topics and techniques offered in police officer in-service training have rendered some systematic review efforts futile (Huey, 2018).

Research has supported the idea that de-escalation training has the capacity to reduce aggressive incidents, but most of this research has been conducted in the fields of nursing and psychiatry (c.f. Engel et al., 2020). More general research on effectiveness of police trainings, especially related to decreasing use of force, have highlighted process, such as the need for active learning strategies (e.g., reflection, discussion, practice) and relevant content and scenarios (e.g., Bennell et al., 2020; Jenkins et al., 2020). In terms of content, qualitative research on previous trainings identified the need for promoting communication skills of officers (Rajakaruna et al., 2017). Other strategies that may be effective in de-escalation for police officers include taking a humanizing (reducing power differentials) approach, compromising, and gaining a citizen's cooperation through collaboratively approaching the problem (Todak and James, 2018; Todak and White, 2019). One officer training program, Verbal Judo, is designed to reduce use of force through teaching 15 skills. In a simulation, participants were more likely to engage in four of the fifteen skills taught (identify yourself, identify your agency, reduce commands, and avoid excessive repetition). However, they were not more likely to use more complex skills, such as empathizing with the subject (Giacomantonio et al., 2019). Taken as a whole, this study suggest that trainings can produce changes in skills in de-escalating conflict. However, these skills were focused on general de-escalation and not on de-escalation with youth.

The small amount of empirically tested police trainings for de-escalation with youth is a critical issue given the expectation that police officers resolve complex, and at times dangerous, social interactions in a just, efficient, and lawful manner. A few youth-focused in-service trainings have shown promise in changing officers' attitudes about adolescents and knowledge of conflict de-escalation with adolescents. These trainings include Policing the Teen Brain, which aims to shift attitudes and promote skills through education and role-plays (Aalsma et al., 2018). In one study, this training resulted in improved attitudes toward youth and increases in knowledge about de-escalation skills (Aalsma et al., 2018). However, this training included two full days and presentations from a range of experts, which may not be sustainable for many police departments. Effective Police Interactions with Youth is a training curriculum (5.5 h) offered in Connecticut, with the goal of reducing disproportionate minority contact by changing officers' knowledge of and attitudes about youth. Improvements have been identified in knowledge and attitudes toward youth (LaMotte et al., 2010). This provides emerging evidence that training can significantly improve officers' attitudes toward youth. However, emerging research suggests that changes in attitudes through de-escalation trainings may not necessarily result in reduced use-of-force incidents (e.g., McLean et al., 2020). Continued research is needed to provide empirically-based de-escalation trainings that are salient, acceptable, feasible, and effective.

Outside of specific research on police trainings, a large body of research has identified effective interventions for de-escalation to reduce aggressive incidents without the use of force, much of which has been conducted in nursing, psychiatry, and psychology (c.f. Engel et al., 2020; Greene and Winkler, 2019). It is important to extend the evidence-based practices in psychology to the work of law enforcement officers, so that officers learn strategies that have been shown to reduce the use of force. Specifically, Collaborative and Proactive Solutions (CPS; formerly called Collaborative Problem-Solving) is an approach based on cognitive-behavioral therapy,

developmental psychology, and neuropsychology (Greene, 2014). The premise of CPS is that youth may have difficulties meeting adult expectations due to lagging skills or unsolved problems, so CPS provides adults with the training to scaffold youths' skill development and to collaboratively solve problems (Greene, 2014). CPS shifts the paradigm from a "bad kid" perspective to a perspective that some youth having lagging skills that make it difficult for them to meet adult expectations in the moment (Greene and Winkler, 2019).

A recent systematic review of CPS found that it was effective in a range of settings, including among families and in schools, inpatient psychiatric units, and juvenile detention centers (Greene and Winkler, 2019). Most relevant to this study, the introduction of CPS into a child and adolescent inpatient psychiatric unit has been associated with a large decrease in physical restraints in two separate trials, with over a 37-fold reduction in restraints (Greene et al., 2006; Martin et al., 2008). Similarly, in an unpublished trial of CPS in two juvenile detention facilities, implementation of CPS was associated with a reduction in youth injury, confinement, restraint, and isolation; a reduction in staff injury; an increase in staff sense of safety; and a reduction in recidivism (reported in Greene and Winkler, 2019). However, no identified research has attempted to generalize the skills taught in CPS to the work of law enforcement officers responding to calls.

### 1.5. The present study

The purpose of the present study was to provide an initial pilot test of a police training workshop designed to promote officers' knowledge of typical adolescent development, awareness of the potential impact of trauma on adolescents' cognition and behavior, and ability to collaboratively resolve calls involving juveniles using Collaborative and Proactive Solutions. This workshop was developed in conjunction with a police department in which the captain of one precinct noted concerns that officers were responding to a high volume of calls involving juveniles, but that officers had not been specifically trained on juvenile behavior. In response to that concern, the first author of this manuscript developed the workshop in conjunction with a police commander with experience in the schools, the lieutenant in charge of the juvenile unit, and a member of the department's Family Intervention Team. Members of the police department provided information and feedback about how to package the workshop and present information in a way that would be perceived as relevant, nonthreatening, and useful to officers, while the research team provided the expertise on adolescent development, the impact of trauma, and the evidence-based practices for reducing use of force. The workshop was revised following the first implementation based on key leaders' feedback (e.g., police commander, precinct captain, hostage negotiator); anonymous feedback on a survey; and feedback delivered verbally by officers to their supervisors.

It was hypothesized that officers and recruits who received the workshop would report (1) increased knowledge of adolescent cognition and behavior; (2) increased self-efficacy to de-escalate adolescents; and (3) decreased anxiety about working with adolescents. Gender moderation and moderation by officer status (officer vs. recruit) for each outcome variable was examined on an exploratory basis with no pre-existing hypotheses. Type A personality was included as a possible moderating factor due to some evidence that personality type may impact engagement in adult learning (Laible et al., 2020).

## 2. Method

### 2.1. Intervention development and description

This workshop was developed using a participatory action approach, with the intention of creating a program that was highly acceptable, sustainable, and effective. Participatory action research (PAR) includes members of the population of interest as collaborators in, rather than targets of, the research process, increasing the ecological validity, impact, and usefulness of the resulting findings. It also helps to address potential difficulties with participant engagement and openness (Baum et al., 2006; Ferré et al., 2010). In this case, police officers may be resistant to trainings that were clearly developed by a group outside the law enforcement system, perhaps due to the lack of a nuanced understanding of policing, incompatibility with departmental culture, or perceived criticism of current practices (e.g., Wolfe et al., 2020).

Engaging police officers as experts in their experience is necessary in promoting change, and this approach has been used in other countries, such as Australia (e.g. the Nexus Project; Wood et al., 2008). Because of the need to facilitate receptivity to the trainings to make change possible, the content, including scenarios and role-plays, were developed in collaboration with police officers with experience working with juveniles as well as a civilian employed by the department as part of the family intervention team. In addition, the survey measures were identified or created with input from those officers as well. This workshop did not explicitly address police bias, because this was beyond the scope of the shared goals of the group. More empirical research is needed to determine the best way to reduce disproportionate minority contact stemming from implicit or explicit bias across the judicial system. In addition, youth community members did not participate in creating the intervention materials, because the goal of the trainings was to facilitate officer attitudinal change and behavioral adoption of existing, empirically supported de-escalation strategies. Although the distal goal of the training is to promote the safety and well-being of youth, this research focused on engaging law enforcement stakeholders in receptivity to and awareness of adolescent development and evidence-based practices for de-escalation with youth. More empirical research is needed to incorporate youth in participatory action research related to police trainings to determine the best strategies to promote collaboration and mutual respect from the perspective of youth.

The resulting workshop, DEWTY (de-escalation with trauma-exposed youth), consisted of three main components, lasting a total of 3 h: (1) understanding adolescent development; (2) understanding the potential impact of trauma on adolescents' cognitions, emotion regulation, and behavior; and (3) identifying and applying strategies for de-escalating situations with adolescents and promoting shared problem-solving. Major goals of the first two components of the workshop were to change officers' cognitions about adolescents

by increasing their understanding that adolescents' comparatively underdeveloped executive functioning skills increase the likelihood that they will engage in risky behaviors, inadequately weigh the costs or undesirable outcomes associated with behavior decisions, and misinterpret others' intent or affect. Delinquent behavior in adolescence was framed as a normative process, with the understanding that certain adolescents are at increased risk for more frequent or severe delinquent behaviors. The impact of trauma exposure on adolescent development was explored, specifically to explain why trauma might be associated with increased involvement in the juvenile justice system, and how the impact of trauma among adolescents could make it more difficult for them to respond peacefully and respectfully to police intervention.

In the third component of the workshop, officers worked in small groups to brainstorm common calls they received involving juveniles, and the group collaboratively separated those situations into those with clear policies and procedures (e.g., grand theft auto, breaking and entering) and "discretionary" situations that involved a great deal of officer judgment (e.g., conflicts between parents and adolescents; adolescents fighting at school; truancy, running away). Officers then brainstormed strategies they experienced as successful for dealing with the discretionary situations. The facilitator then triangulated officers' existing strategies with strategies based on Collaborative and Proactive Solutions (Greene, 2014), and emotion-focused coping (e.g., reducing stimulation, taking a breath, distraction). The four steps included (1) reduce stimulation; (2) listen and reassure; (3) identify the problem; and (4) invite the child to problem-solve. Officers discussed barriers to using the skills. Each workshop ended with role-plays to use the skills in discretionary situations.

For the police academy recruits, one 2-h workshop was offered to three successive cohorts as part of the regular training schedule. The training for recruits was shorter as they had no previous experience responding to juvenile calls, so certain components related to discussing difficult situations and sharing strategies among themselves were omitted. However, all recruits did participate in role-plays for using the four steps of de-escalation.

## 2.2. Participants and setting

Participants were 98 current officers ( $n = 52$ ) and recruits in the police academy ( $n = 46$ ) who participated in the workshop. The sample was 84.5% male. Of the current officers, 21.6% had served in the police force for less than one year; 41.2% between 1 and 5 years, and 37.3% for more than 5 years. The sample ranged in educational attainment: 2% received a General Education Development (GED) equivalency degree (GED); 20.4% graduated from high school; 23.5% attended some tertiary education but did not graduate; 19.4% graduated from a two-year college, vocation, or trade school; 26.5% graduated from a four-year college; and 8.2% received postgraduate education or a graduate degree. Racial and ethnic identity data were not collected for this study; however, within the department as a whole, 31% of sworn officers were African American; 65% were Caucasian American; and 1% were Latino(a) American. The city itself was about 50% African American, 45% Caucasian American, and 3% Latino(a) American, making Caucasian American police officers disproportionately represented on the force.

## 2.3. Procedures

A random selection of officers from each precinct received orders to participate in one of four 3-h workshops offered over the course of one month. In addition, the workshop was provided as part of the police academy training sequence for three classes of recruits. Given low response rates (0%) when electronic survey links were emailed to workshop participants prior to the first workshop, participants completed the pretest survey immediately prior to workshop implementation and the posttest survey immediately following the workshop, leading to a 100% response rate. Participants were asked to create a unique ID for themselves and use this ID on the pretest and posttest so that survey responses were completely anonymous. This led to some missing data when pre- and posttest IDs did not match.

## 2.4. Measures

### 2.4.1. Quantitative measures

Given limited research in this area, several measures were developed for the purpose of this study. A full list of items by scale for the newly developed scales are available in the Appendix. One scale, *Efficacy for Dealing with Adolescents*, was created for this study to assess adults' sense of effectiveness and an internal locus of control in understanding adolescents, de-escalating problem situations and intense negative affect, and being able to make a positive impact on adolescents. Participants responded to a 9-item scale on a five-point rating scale, from 1 = *Strongly Disagree* to 5 = *Strongly Agree*. Example items include "I can understand a teenager's point-of-view;" "If a teen yells or curses at me, I can calm the situation down;" and "If I try hard, I can get through to even the most difficult teenagers." Cronbach's alpha for the scale was 0.54.

*Beliefs about Adolescents* is a five-item scale created for this study that was intended to assess knowledge of adolescent development. It was presented as an attitudinal measure but treated as an index, with higher scores indicating greater knowledge of adolescent development. Example items include "Most teenagers don't engage in any delinquent activity" (reverse-scored), and "It is harder for teenagers to control their emotions than it is for adults." Because it was treated as a knowledge test designed to assess a range of knowledge about adolescent development, reliability was weak, as expected (Cronbach's  $\alpha = 0.42$ ).

An adapted version of the *Intergroup Anxiety Scale* (Stephan and Stephan, 1985) was used to assess police officers' anxiety about dealing with adolescents. The original scale was designed to assess cross-racial anxiety for a general adult population. The prompt was adapted for this study to read, "Pretend you were the only adult in a group, and you were spending time with a group of teenagers (for



example, talking with them, working on a project with them). How do you think you would feel?" Participants responded on a scale of 1 = *Not At All* to 7 = *Very* for ten emotion words, including awkward, accepted (reverse-scored), irritated or annoyed, careful, and confident (reverse-scored). Reliability was adequate as estimated by Cronbach's alpha (0.64).

Type A Personality was assessed by an adapted version of the Jenkins Activity Survey (Helmreich et al., 1988; Spence et al., 1987). The Jenkins Activity Survey is a 12-item measure comprising two scales: Impatience/Irritability (e.g., "Typically, how easily do you get irritated?") and Achievement Striving (e.g., "How seriously do you take your work?"). Response options varied by question. In this study, reliability was low as measured by Cronbach's alpha (irritability:  $\alpha = 0.61$ ; achievement:  $\alpha = 0.54$ ). Type A Personality was only administered at pretest.

#### 2.4.2. Qualitative Measures

Two types of qualitative data were collected: information about common calls involving juveniles, and feedback about the workshop. Lists of common calls involving juveniles was generated by each break-out group in workshops with current police officers (not recruits). A group-level analysis was used in which each break-out group brought their lists back to the larger group, explained the situations, and collaboratively identified which calls were more likely to involve discretion (c.f. Vaughn and Lohmueller, 2014). For the qualitative feedback, participants responded to open-ended questions at the end of the posttest survey about what they liked and what they disliked. Two authors of the current study reviewed the responses and created potential categories to use in coding the responses. Responses were then coded by two coders using consensus coding. The coders included an author of the current study and a mixed methods researcher who was not familiar with the study. The coders reviewed each comment and reached consensus. In this process, two categories (*Schedule* and *Other participants*) were added to the initially identified categories.

#### 2.5. Data analysis

Intervention effectiveness was assessed using a mixed methods approach. The qualitative results were analyzed as described in 2.4.2. Qualitative Measures. For the quantitative data analysis, repeated measures analyses of variance were conducted to determine change in scores over time. Gender, Type A personality, and officer status were explored as possible moderators of intervention effectiveness.

### 3. Results

#### 3.1. Correlations and gender differences at baseline

Correlations among constructs of interest at pretest are presented in Table 1. Interestingly, knowledge about adolescence was not correlated with any other variable. Intergroup anxiety was negatively correlated with self-efficacy for dealing with adolescents and positively correlated with impatience/irritability. There were no baseline differences based on gender for achievement striving ( $F[1, 96] = 0.87$ ;  $p = .35$ ); irritability/impatience ( $F[1, 96] = 0.35$ ;  $p = .55$ ); self-efficacy for dealing with adolescents ( $F[1, 96] = 0.98$ ;  $p = .33$ ); or knowledge about adolescence ( $F[1, 96] = 1.69$ ;  $p = .20$ ). However, there was a significant difference in intergroup anxiety, with female police officers reporting lower anxiety for interacting with adolescents than male police officers ( $M_{\text{male}} = 1.78$ ;  $M_{\text{female}} = 1.57$ , Cohen's  $d = 0.59$ ;  $F[1, 96] = 4.60$ ;  $p = .04$ ).

#### 3.2. Common calls involving juveniles

In the workshops that were conducted as in-services for existing officers, officers were asked to identify the most frequent situations in which they were called to assist involving juveniles. Officers brainstormed lists of situations in a total of 12 break-out groups and then presented their lists in the workshop. This information provided the context in which conflict de-escalations skills were discussed and practiced. In total, 78 frequent situations were identified across the twelve groups and were categorized into 15 distinct type of situations (see Table 2). In the workshop, officers categorized the lists broadly into "clear-cut" situations, in which there was an obvious crime and there were clearly identified procedural next steps (e.g., theft, assault, gang involvement). The more common category was "murky" situations that required a great deal of officer discretion and necessitated officers acting often as a mediator or problem-solver (e.g., parent-child conflict; truancy; running away).

The most common types of situations reported by participants were *Caregiver-Child Conflicts* (including defiant, disobedient, and

**Table 1**  
Pretest means and correlations of variables.

Variable	Mean (SD)	1	2	3	4
1. Self-efficacy with adolescents	3.83 (.42)	–			
2. Knowledge	3.61 (.57)	0.04	–		
3. Intergroup anxiety	1.75 (.36)	–0.38**	0.09	–	
4. Impatience/irritability	1.91 (.42)	–0.20*	0.03	0.33**	–
5. Achievement striving	2.74 (.42)	0.10	0.01	–0.14	–0.004

Note. N ranged from 78 to 103. \*  $p < .05$ . \*\*  $p < .01$ .

**Table 2**

Situations to which participants were most frequently called to assist involving juveniles.

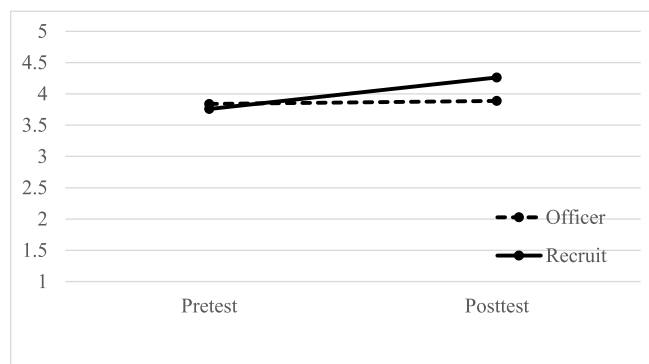
Situation Category	Groups (#)	Groups (%)
Caregiver-Child conflict	9	75.00%
Runaway/elopeing	9	75.00%
Risky or illegal sexual behavior	6	50%
Theft	6	50%
Violent/Disruptive School Behavior	5	41.67%
Drugs	5	41.67%
Automobile theft or joyriding	5	41.67%
Truancy	5	41.67%
Domestic violence	3	25.00%
Gang involvement	2	16.67%
Cyber aggression	2	16.67%
Curfew violations	2	16.67%
Assault	2	16.67%
Other	5	41.67%

*N* = 12 groups. A total of 78 responses were consolidated into these 15 categories.

disrespectful behavior towards a parent or caregiver) and *Running Away/Eloping* (both situations identified by 75% of groups). Half of the groups identified situations involving *Risky or Illegal Sexual Behaviors* (e.g., sexting, sex crimes) and *Theft* (including breaking and entering; officers specifically mentioned that adults often identified targets and “sent” children or adolescents to steal). Participants also reported frequently responding to situations involving adolescents related to *Violent/Disruptive School Behavior*, *Drugs*, *Automobile Theft or Joyriding* (including grand theft auto, breaking into vehicles, reckless driving), and *Truancy* (each identified by 5 of the 12 groups; 42%). One quarter of the groups identified *Domestic Violence* calls (3 out of 12 groups); in those cases, youth were not the perpetrator, but were often on the scene and had witnessed violence between caregivers or between a caregiver and the caregiver’s partner. The situations of *Gang Involvement*, *Cyber Aggression*, *Curfew Violations*, and *Assault* were each identified by 2 groups (16.67%). *Other* responses seemed to include explanations for the situation rather than a description of the situation itself (e.g., “Dislike of law officer-authority;” “Violence that is supported by their parent;” and “Kids raising kids”).

### 3.3. Intervention effectiveness

A series of repeated measures analyses of variance were conducted to test for differences from pretest to posttest in knowledge, intergroup anxiety, and self-efficacy for dealing with adolescents. Gender, officer status (officer vs. recruit) and Type A personality were explored as possible moderators. As hypothesized, knowledge about adolescent development increased from pretest to posttest ( $M_{\text{pretest}} = 3.64$ ;  $M_{\text{posttest}} = 3.93$ , Cohen’s  $d = 0.58$ ;  $F[1, 76] = 23.93$ ;  $p < .001$ ). Gender, officer status, and Type A personality did not moderate the impact of the program. However, there was a main effect of officer status; recruits scored higher on knowledge of adolescence than officers ( $M_{\text{recruits}} = 3.89$ ;  $M_{\text{officers}} = 3.64$ , Cohen’s  $d = 0.48$ ;  $F[1, 76] = 4.43$ ;  $p = .04$ ). Intergroup anxiety about working with adolescents significantly decreased from pretest to posttest ( $M_{\text{pretest}} = 1.75$ ;  $M_{\text{posttest}} = 1.67$ , Cohen’s  $d = 0.29$ ;  $F[1, 77] = 4.70$ ;  $p = .03$ ). Gender, officer status, and Type A personality did not moderate any effects. Self-efficacy for dealing with adolescents increased from pretest to posttest ( $M_{\text{pretest}} = 3.79$ ;  $M_{\text{posttest}} = 4.10$ , Cohen’s  $d = 0.55$ ;  $F[1, 75] = 22.11$ ;  $p < .001$ ). An interesting moderation by officer status occurred ( $F[1, 75] = 15.10$ ;  $p < .001$ ). For recruits, the training resulted in significantly increased self-efficacy for working with adolescents (Cohen’s  $d = 1.03$ ), but for officers, self-efficacy changed very little after the training (Cohen’s  $d = 0.09$ ). This interaction is depicted in Fig. 1.



**Fig. 1.** Officer status moderation of intervention effects on self-efficacy for dealing with adolescents.

### 3.4. Qualitative feedback

Participants were also able to respond to open-ended questions about what they liked most about the training and what they liked least. The full information is available in [Table 3](#). Ninety-seven officers and recruits replied to the question about what they liked most, resulting in 116 coded comments. The largest category of comments referred to appreciating the interactive format of the workshop (35 comments, 30.17%). After that, the largest category related to appreciating the information provided in the workshop, primarily the science behind adolescent development (27 comments; 23.28%). Participants indicated that the general format of the presentation (e.g., PowerPoint) was well done (14 comments, 12.07%). Participants believed the training was relevant, focused on needed tactics, and addressed an area that was not normally discussed (13 comments, 11.21%). Participants also appreciated the opportunity to exchange ideas with their peers and hearing others' point of view (5 comments; 4.31%). About 14% of the comments referred to liking the instructor's positive attitude or presentation style (16 comments). Of note, current officers appeared to mention relevance and the opportunity to exchange ideas with their peers more than did the recruits who received the training during their time in the academy.

Ninety-one participants responded to the question about what they liked least, resulting in 94 coded comments. The responses to this question were more vague, and often respondents did not explain what specifically they did not like. Of those respondents, 39 (41.49%) said the question was not applicable (there was nothing they did not like). The next largest group (11 comments, 11.71%) did not like something related to the group activities and role playing. Nine participants (9.57%) did not like the format (e.g., use of a PowerPoint). Interestingly, 9 participants (9.57%) thought the workshop was too short and three participants (3.19%) thought it was too long. Seven comments (7.45%) indicated a dislike of something related to content (e.g., repetition, dry, wanting additional information). Six respondents (6.38%) noted that parts of the workshop were not relevant for their work. Four respondents (4.26%) indicated that the schedule was liked least (e.g., day off, morning after working a night shift), and 3 respondents reported that the behavior of other participants was liked least (e.g., oversharing, not taking it seriously).

## 4. Discussion

The purpose of the present study was to provide an initial pilot test of a police training workshop designed to promote officers' knowledge of typical adolescent development, awareness of the potential impact of trauma on adolescents' cognition and behavior, and ability to collaboratively resolve calls involving juveniles. Focused officer training on de-escalating situations with adolescents, especially trauma-exposed adolescents, is very limited in the United States. The deficit in this knowledge base puts many police officers at a disadvantage and can lead to unwanted outcomes for both officers and the communities they serve. Providing knowledge on adolescent development and setting expectations around encounters with adolescents and young adults among law enforcement could increase the opportunity for adaptive exchanges and potentially increase trust, decrease negative interactions between law enforcement and the young people they are engaging with, and potentially decrease unnecessary fatal outcomes. This pilot was the product of a collaboration between a police department and psychologists at a university. A participatory action approach creates opportunities for developing effective strategies and techniques that are both empirically based and relevant and acceptable to end-users.

Consistent with hypotheses, the findings of this study suggest that the intervention was effective in increasing knowledge of adolescent development and decreasing anxiety about working with adolescents. These findings provide emerging evidence that this workshop can be helpful in increasing officers' understanding of adolescent development, so that they can have age-appropriate expectations about adolescent behavior. In addition, these findings suggest that the workshop may help officers to be more

**Table 3**

Categorization of open-ended responses to what participants liked most and liked least about the workshop.

	Comments (#)	Comments (%)
Liked most (Total)	116	–
Format-interactive	35	30.17%
Information	27	23.28%
Instructor	16	13.79%
Format-presentation	14	12.07%
Relevance/skills	13	11.21%
Exchange with peers	5	4.31%
Everything	5	4.31%
Nothing	1	0.01%
Liked least (Total)	94	–
Not applicable	39	41.49%
Group activities/role play	11	11.71%
Format	9	9.57%
Too short	9	9.57%
Content	7	7.45%
Relevance	6	6.38%
Schedule	4	4.26%
Too long	3	3.19%
Other Participants	3	3.19%
Time (unclear)	2	2.13%
Too little role-play	1	1.06%



comfortable about engaging with adolescents. Similarly, there was an overall increase in self-efficacy for dealing with adolescents. This finding was driven by the increase in self-efficacy among recruits, with no significant increase among existing officers. This suggests that early training may have a pivotal role in building self-efficacy for working with youth in the community.

The qualitative findings suggested that overall, participants appreciated the format and structure of the workshop, and that they found the material to be relevant and useful. Of note, existing officers in particular appeared to appreciate the opportunity to exchange ideas and tactics with their peers. There was minimal feedback about what was disliked about the intervention, and about 10% of participants indicated that they wished the workshop was longer. Based on these findings, it is likely that this workshop is highly acceptable and perceived as relevant and useful. The acceptability of the intervention may be due to the collaborative, participatory approach through which it was developed combined with adult education strategies. Research and theory on adult education suggest that adult education is most successful when the adults have bought into the reason for further learning; bring in and share their own experiences and insights with other learners as well as gain insights and perspectives from their peers; perceive the content as relevant; and work to solve problems during the learning experiences (e.g., Brookfield, 1995; Gom, 2009; Mezirow, 1993). Continuing to maintain these factors in future in-services and trainings for officers will likely maximize their engagement as well as the usefulness of the training.

#### 4.1. Limitations

There are several limitations to this study. One limitation was that the participatory action research intervention development phase only included law enforcement representatives as key stakeholders. That is, other key stakeholders, such as youth as well as people who are likely to call the police due to conflict with youth or youth behavior (e.g., parents and caregivers; school personnel) were not included in intervention development. As noted previously, this study was a first step with the goal of partnering with law enforcement to package evidence-based de-escalation strategies into a training that would be acceptable to police officers and salient to their work. The next step for this research is to incorporate the perspectives, values, needs, and goals of youth, parents/caregivers, and school personnel who manage school discipline. In particular, it will be important to elicit the perspectives of youth of color who live in overburdened, underresourced communities. Triangulating evidence-based practices with the voices of a range of stakeholders will further develop this intervention and increase the likelihood that it will be maximally effective.

There were also some limitations to the research design. First, the design was a pretest-posttest design with no control group. Although the lack of a control group is a limitation, given that scores changed over the course of 2–3 h, from immediately prior to the intervention to immediately following the intervention, it is likely that any observed changes were directly due to the intervention. However, given that there was no follow-up, it is unclear how long the improvements in knowledge and comfort with working with adolescents lasted. Additionally, only self-report measures were used, which are limited in that they may be biased and subject to demand characteristics. Another limitation is that no behavioral indicators were assessed (e.g., actual use of force during interactions with adolescents, use of skills taught during the intervention in interactions with adolescents) either via self-report or observational tools. This is a limitation in common with other police trainings on police-juvenile interactions (e.g., Aalsma et al., 2018; Goodrich et al., 2014; LaMotte et al., 2010). Future research should prioritize measuring the impact of trainings on actual behavior.

## 5. Conclusions and future directions

Together, the quantitative and qualitative results indicate that this workshop has the potential to positively impact officers' understanding of adolescents, especially adolescents who have been exposed to trauma, and their knowledge of strategies and tactics to de-escalate conflict situations with adolescents. It is likely that officers may need more practice and coaching before their self-efficacy for de-escalating conflict significantly improves. A promising factor was that this workshop was very time-limited (2–3 h) but resulted in significant effects. Therefore, increasing the dosage may increase the impact even more. Notably, this training is low cost and easy to administer. Integrating such a training into the existing system may impact law enforcement officers' comfort with and knowledge of adolescents and their development.

The long, complex, and racialized history between law enforcement and Black Americans in the United States has created a context to which there is no easy or simple solution related to reducing discretionary charges and promoting the minimum necessary use of force. Young people, particularly Black young people, may not trust that officers will prioritize their safety and the safety of their community. There are countless examples of young people of color, particularly Black youth, whose interactions with officers have ended with death, oftentimes unjustly or without due process. Specifically, about one in every 1000 Black men are killed by police officers, with rates peaking between the ages of 20 and 35 years old, a rate about 2.5 times higher than for White men (Edwards et al., 2019). There is a need to build trust between police departments and members of Black communities through consistently equitable, respectful, and just interactions that occur over the course of time. If adults and adolescents expect that police officers will treat them fairly and are solely motivated to protect and promote the safety and well-being of the community, they will be much more likely to engage collaboratively with police officers. Further research should incorporate the perspectives of youth and young adults of color who live in areas of concentrated disadvantage, so that they can provide information and ideas that can be incorporated in police-focused interventions.

Many existing strategies for improving such exchanges between law enforcement and young Black youth have resulted in inter-generational sharing of norms and expectations for interacting with law enforcement (Brunson and Weitzer, 2011). This process places some of the responsibility of successful resolution of the situation on the youth, which may stretch the limits of their developmental capacity. There are examples of programs that teach youth how to interact appropriately with law enforcement officers if they

experience a traffic stop or other police-initiated contact, such as Bridging the Gap, a program adopted by the Federal Bureau of Investigation. Bridging the Gap provides opportunities for youth to interact with law enforcement officers in a collaborative and enjoyable way, to learn more about law enforcement, and to understand mutual respect guidelines for interactions with law enforcement officers (U.S. Department of Justice, 2017). These programs are helpful for youth to develop the capacity to respond productively to police-initiated contacts and can complement adequate training for police officers on interacting with youth. A small percentage of youth, particularly trauma-exposed youth, may have deficits in judgment, increased hyperarousal, and emotion dysregulation that make it difficult for them to respond respectfully to officers during crises or conflicts. Trainings for officers can promote a shift from our existing paradigm of expecting those adolescents to successfully de-escalate encounters with law enforcement to ensuring, on a systematic level, that there is proper training and appropriately allocated resources for law enforcement to have the tools required to engage with adolescents.

In the context of a national conversation about the role of law enforcement in social welfare (Kelly, 2020), it is important to note that oftentimes the police are community members' first call in a situation where they need help, whether or not the situation involves illegal activity. Because of this, officers are placed in situations where they are expected to help resolve a range of situations, whether or not it is a situation that is directly related to duties of law enforcement or a situation for which they have trainings or protocols to guide their behavior. As a community, effective training is one way to equip law enforcement officers to deal with the current reality of significant gaps in social services or community members' lack of access to necessary social services (such as family therapy, intensive in-home therapy, safe schools, access to food and shelter). This argument does not imply that it is law enforcement officers' duties to provide these services; rather, they are currently being asked to fulfill this role, and it is society's responsibility to equip them to do so until the gaps in social services are more effectively addressed.

### Declaration of competing interest

The authors declare that they have no conflicts of interest to report.

### Appendix A. Newly developed measures

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#### Efficacy for Dealing with Adolescents

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1. I can understand a teenager's point-of-view.
  2. If I am called to a situation that involves a teen, I know how to handle it.
  3. If a teen yells or curses at me, I can calm the situation down.
  4. Sometimes teens need help from adults to calm down.
  5. I have a few different strategies to redirect teens when they are creating a disturbance.
  6. If I try hard, I can get through to even the most difficult teenagers.
  7. Some teens are going to end up in jail no matter what I do.
  8. When it comes down to it, a police officer can't do much to help teenagers, because their family life is a large influence on their behavior.
  9. Some teenagers will do okay if they know that just one adult cares about them.
- 

#### Beliefs about adolescents

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1. It is harder for teenagers to control their emotions than it is for adults.
  2. There is no excuse for teens giving into peer pressure.
  3. Most teenagers don't engage in any delinquent activity.
  4. Because their brains still aren't developed, teenagers don't use good judgment in many situations.
  5. Teenagers should be treated like adults.
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*Note.* Participants responded on a 5-point rating scale: 1 = *Strongly Disagree*; 2 = *Somewhat Disagree*; 3 = *Neutral*; 4 = *Somewhat Agree*; 4 = *Strongly Agree*.

### References

- Aalsma, M.C., Schwartz, K., Tu, W., 2018. Improving police officer and justice personnel attitudes and de-escalation skills: a pilot study of Policing the Teen Brain. *J. Offender Rehabil.* 57 (7), 415–430. <https://doi.org/10.1080/10509674.2018.1523819>.
- Allen, T.T., 2005. Taking a juvenile into custody: situational factors that influence police officers' decisions. *J. Sociol. Soc. Welfare* 32 (2), 121–129.
- Amodio, D.M., 2014. The neuroscience of prejudice and stereotyping. *Nat. Rev. Neurosci.* 15, 670–682.
- Arnett, J.J., 2014. *Adolescence and Emerging Adulthood*. Pearson Education, New York, NY. <https://doi.org/10.1093/acprof:oso/9780199929382.001.0001>.
- Baum, F., MacDougall, C., Smith, D., 2006. Participatory action research. *J. Epidemiol. Community Health* 60 (10), 854–857. <https://doi.org/10.1136/jech.2004.028662>.
- Bennell, C., Blaskovits, B., Jenkins, B., Semple, T., Khanizadeh, A.J., Brown, A.S., Jones, N.J., 2020. Promising practices for de-escalation and use-of-force training in the police setting: a narrative review. *Policing: Int. J.* <https://doi.org/10.1108/PLJPSM-06-2020-0092>.
- Bittner, E., Krantz, S., 1996. Standards related to police handling of juvenile problems. In: Shepherd, R.E. (Ed.), *The American Bar Association's Juvenile Justice Standards Annotated: A Balanced Approach*. Institute of Judicial Administration-American Bar Association, Chicago, IL, pp. 233–241.
- Brookfield, S., 1995. Adult learning: an overview. *Int. Encycl. Educ.* 10, 375–380.
- Brown, R., 2005. Black, White, and unequal: examining situational determinants of arrest decisions from police-suspect encounters. *Crim. Justice Stud. Crit. J. Crime Law Soc.* 18 (1), 51–68.

- Brown, R.A., Novak, K.J., Frank, J., 2009. Identifying variation in police officer behavior between juveniles and adults. *J. Crim. Justice* 37 (2), 200–208. <https://doi.org/10.1016/j.jcrimjus.2009.02.004>.
- Brunson, R.K., Weitzer, R., 2011. Negotiating unwelcome police encounters: the intergenerational transmission of conduct norms. *J. Contemp. Ethnogr.* 40 (4), 425–456. <https://doi.org/10.1177/0891241611409038>.
- Cisler, J.M., Amstadter, A.B., Begle, A.M., Resnick, H.S., Danielson, C.K., Saunders, B.E., Kilpatrick, D.G., 2011. A prospective examination of the relationships between PTSD, exposure to assaultive violence, and cigarette smoking among a national sample of adolescents. *Addict. Behav.* 36, 994–1000. <https://doi.org/10.1016/j.addbeh.2011.05.014>.
- Correll, J., Park, B., Judd, C.M., Wittenbrink, B., 2002. The police officer's dilemma: using ethnicity to disambiguate potentially threatening individuals. *J. Pers. Soc. Psychol.* 83, 1314–1329.
- Crosby, R.A., Santelli, J.S., DiClemente, R.J., 2009. Adolescents at risk: a generation in jeopardy. *Adolescent Health: Understanding and Preventing Risk Behaviors* 3–5.
- Crutchfield, R.D., Skinner, M.L., Haggerty, K.P., McGlynn, A., Catalano, R.F., 2009. Racial disparities in early criminal justice involvement. *Race Soc. Probl.* 1 (4), 218–230. <https://doi.org/10.1007/s12552-009-9018-y>.
- Davis, E., Whyde, A., Langton, L., 2018. Contacts between the Police and the Public, 2015. US Department of Justice. <https://www.bjs.gov/content/pub/pdf/cpp15.pdf>.
- Dow-Edwards, D., MacMaster, F.P., Peterson, B.S., Niesink, R., Andersen, S., Braams, B.R., 2019. Experience during adolescence shapes brain development: from synapses and networks to normal and pathological behavior. *Neurotoxicol. Teratol.* 76, 106834 <https://doi.org/10.1016/j.ntt.2019.106834>.
- Edwards, F., Lee, H., Esposito, M., 2019. Risk of being killed by police use of force in the United States by age, race-ethnicity, and sex. *Proc. Natl. Acad. Sci. Unit. States Am.* 116 (34), 16793–16798.
- Engel, R.S., McManus, H.D., Herold, T.D., 2020. Does de-escalation training work? A systematic review and call for evidence in police use-of-force reform. *Criminol. Publ. Pol.* 19 (3), 721–759.
- Federal Bureau of Investigation, 2016. Law Enforcement Officers Killed and Assaulted, 2015. U.S. Department of Justice, Federal Bureau of Investigation. <https://ucr.fbi.gov/leoka/2015>.
- Ferré, C.D., Jones, L., Norris, K.C., Rowley, D.L., 2010. The Healthy African American Families (HAAF) project: from community-based participatory research to community-partnered participatory research. *Ethn. Dis.* 20, S2–S8.
- Giacomantonio, C., Goodwin, S., Carmichael, G., 2019. Learning to de-escalate: evaluating the behavioural impact of Verbal Judo training on police constables. *Police Pract. Res. Adv. Online Publ.* <https://doi.org/10.1080/15614263.2019.1589472>.
- Gom, O., 2009. Motivation and adult learning. *Contemp. PNG Stud.* 10, 17–25.
- Goodrich, S.A., Anderson, S.A., LaMotte, V., 2014. Evaluation of a program designed to promote positive police and youth interactions. *J. Juv. Justice* 3 (2), 55–71.
- Greene, R.W., 2014. *The Explosive Child: A New Approach for Understanding and Parenting Easily Frustrated, Chronically Inflexible Children*. Revised and Updated. Harper, New York.
- Greene, R.W., Ablon, S.A., Martin, A., 2006. Innovations: child Psychiatry: use of Collaborative Problem Solving\* to reduce seclusion and restraint in child and adolescent inpatient units. *Psychiatr. Serv.* 57 (5), 610–616.
- Greene, R.W., Winkler, J., 2019. Collaborative & Proactive Solutions: a review of research findings in families, schools, and treatment facilities. *Clin. Child Fam. Psychol. Rev.* 22 (4), 549–561.
- Helmreich, R., Spence, J., Pred, R., 1988. Making it without losing it: Type A, achievement motivation, and scientific attainment revisited. *Pers. Soc. Psychol. Bull.* 14 (3), 495–504. <https://doi.org/10.1177/0146167288143008>.
- Hockenberry, S., Puzanchera, C., 2019. Juvenile Court Statistics 2017. National Center for Juvenile Justice, Pittsburgh, PA. <http://www.ncjj.org/pdf/jcsreports/jcs2017report.pdf>.
- Huey, L., 2018. What Do We Know about In-Service Police Training? Results of a Failed Systematic Review, vol. 40. Sociology Publications. <https://ir.lib.uwo.ca/sociologypub/40>.
- International Association of Chiefs of Police, n.d. The Effects of Adolescent Development on Policing. International Association of Chiefs of Police. <https://www.theiacp.org/sites/default/files/2018-08/IACPBriefEffectsofAdolescentDevelopmentonPolicing.pdf>.
- Jenkins, B., Semple, T., Bennell, C., 2020. An evidence-based approach to critical incident scenario development. *Policing: Int. J.* <https://doi.org/10.1108/PLJPSM-02-2020-0017>.
- Kelly, M.L., 2020. Wilmington Police Chief on the Firing of Police Officers for Their Racist Comments. NPR. <https://www.npr.org/2020/07/01/886299141/wilmington-police-chief-on-the-firing-of-police-officers-for-their-racist-comments>.
- Laible, M.C., Anger, S., Baumann, M., 2020. Personality traits and further training. *Front. Psychol.* 11, 1–20. <https://doi.org/10.3389/fpsyg.2020.510537>.
- LaMotte, V., Ouellette, K., Sanderson, J., Anderson, S.A., Kosutic, I., Griggs, J., Garcia, M., 2010. Effective police interactions with youth: a program evaluation. *Police Q.* 13 (2), 161–179. <https://doi.org/10.1177/109861110365689>.
- Lawrence, R.S., Gootman, J.A., Sim, L.J., 2009. *Adolescent Health Services: Missing Opportunities*. National Academies Press, Washington, DC.
- Luna, B., Padmanabhan, A., O'Hearn, K., 2010. What has fMRI told us about the development of cognitive control through adolescence? *Brain Cognit.* 72 (1), 101–113. <https://doi.org/10.1016/j.bandc.2009.08.005>.
- Marans, S., Hahn, H., 2017. Enhancing Police Responses to Children Exposed to Violence. Office of Juvenile Justice and Delinquency Prevention. <https://www.theiacp.org/sites/default/files/2018-08/CEVToolkit.pdf>.
- Martin, A., Krieg, H., Esposito, F., Stubbe, D., Cardona, L., 2008. Reduction of restraint and seclusion through Collaborative Problem Solving: a five-year, prospective inpatient study. *Psychiatr. Serv.* 59 (12), 1406–1412.
- Marusak, H.A., Martin, K.R., Etkin, A., Thomason, M.E., 2015. Childhood trauma exposure disrupts the automatic regulation of emotional processing. *Neuropsychopharmacology* 40 (5), 1250–1258.
- Mezirow, J., 1993. A transformation theory of adult learning. *Adult Educ. Res. Ann. Conf. Proce.* 31, 141–146.
- McLean, K., Wolfe, S.E., Rojek, J., Alpert, G.P., Smith, M.R., 2020. Randomized controlled trial of social interaction police training. *Criminol. Publ. Pol.* 19 (3), 805–832.
- Moffitt, T.E., 2003. Life-course-persistent and adolescence-limited antisocial behavior: a 10-year research review and a research agenda. In: Lahey, B.B., Moffitt, T.E., Caspi, A. (Eds.), *Causes of Conduct Disorder and Juvenile Delinquency*. The Guilford Press, New York, NY, pp. 49–75.
- Morin, R., Parker, K., Stepler, R., Mercer, A., 2017. Police Views, Public Views. Pew Research Center. <https://www.pewsocialtrends.org/2017/01/11/police-views-public-views/>.
- National Institute of Justice, 2009. The Use-Of-Force Continuum. U.S. Department of Justice, Department of Justice Programs. <https://nij.ojp.gov/topics/articles/use-of-force-continuum>.
- Overstreet, S., 2000. Exposure to community violence: defining the problem and understanding the consequences. *J. Child Fam. Stud.* 9 (1), 7–25.
- Rajakaruna, N., Henry, P.J., Cutler, A., Fairman, G., 2017. Ensuring the validity of police use of force training. *Police Pract. Res.* 18 (5), 507–521. <https://doi.org/10.1080/15614263.2016.1268959>.
- Sampson, R.J., 2012. Neighborhood inequality, violence, and the social infrastructure of the American city. In: Tate, W.F. (Ed.), *Research on Schools, Neighborhoods, and Communities: toward Civic Responsibility*. Rowman & Littlefield, New York, pp. 11–28.
- Schwab-Stone, M.E., Ayers, T.S., Kasrow, W., Voyce, C., Barone, C., Shriver, T., Weissberg, R.P., 1995. No safe haven: a study of violence exposure in an urban community. *J. Am. Acad. Child Adolesc. Psychiatr.* 34 (10), 1343–1352.
- Somerville, L.H., Jones, R.M., Casey, B.J., 2010. A time of change: behavioral and neural correlates of adolescent sensitivity to appetitive and aversive environmental cues. *Brain Cognit.* 72 (1), 124–133. <https://doi.org/10.1016/j.bandc.2009.07.003>.
- Spence, J., Helmreich, R., Pred, R., 1987. Impatience versus achievement strivings in the type A pattern: differential effects on students' health and academic achievement. *J. Appl. Psychol.* 72 (4), 522–528. <https://doi.org/10.1037/0021-9010.72.4.522>.

- Stein, B.D., Jaycox, L.H., Katoaka, S., Rhodes, H.J., Vestal, K.D., 2003. Prevalence of child and adolescent exposure to community violence. *Clin. Child Fam. Psychol. Rev.* 6, 247–264.
- Stephan, W., Stephan, C., 1985. Intergroup anxiety. *J. Soc. Issues* 41 (3), 157–175. <https://doi.org/10.1111/j.1540-4560.1985.tb01134.x>.
- Sullivan, T.N., Farrell, A.D., Kliewer, W., Vulin-Reynolds, M., Valois, R.F., 2007. Exposure to violence in early adolescence: the impact of self-restraint, witnessing violence, and victimization on aggression and drug use. *J. Early Adolesc.* 27, 296–323. <https://doi.org/10.1177/0272431607302008>.
- Sumter, S.R., Bokhorst, C.L., Steinberg, L., Westenberg, P.M., 2009. The developmental pattern of resistance to peer influence in adolescence: will the teenager ever be able to resist? *J. Adolesc.* 32, 1009–1021. <https://doi.org/10.1016/j.adolescence.2008.08.010>.
- Terrill, W., Mastrofski, S.D., 2002. Situational and officer-based determinants of police coercion. *Justice Q. JQ* 19 (2), 215–248. <https://doi.org/10.1080/07418820200095221>.
- Todak, N., James, L., 2018. A systematic social observation study of police de-escalation tactics. *Police Q.* 21 (4), 509–543. <https://doi.org/10.1177/1098611118784007>.
- Todak, N., White, M.D., 2019. Expert officer perceptions of de-escalation in policing. *Policing: Int. J.* 42 (5), 832–846. <https://doi.org/10.1108/PLJPSM-12-2018-0185>.
- Todd, A.R., Thiem, K.C., Neel, R., 2016. Does seeing faces of young Black boys facilitate the identification of threatening stimuli? *Psychol. Sci.* 27, 384–393. <https://doi.org/10.1177/0956797615624492>.
- U.S. Department of Justice, 2017. Bridging the Gap. Retrieved from. <https://www.justice.gov/usao-sdal/bridging-gap>.
- Vaughn, L.M., Lohmueller, M., 2014. Calling all stakeholders: group-level assessment (GLA)—a qualitative and participatory method for large groups. *Eval. Rev.* 38 (4), 336–355. <https://doi.org/10.1177/0193841X14544903>.
- Wahlstrom, D., White, T., Luciana, M., 2010. Neurobehavioral evidence for changes in dopamine system activity during adolescence. *Neurosci. Biobehav. Rev.* 34 (5), 631–648. <https://doi.org/10.1016/j.neubiorev.2009.12.007>.
- Wolfe, S., Rojek, J., McLean, K., Alpert, G., 2020. Social interaction training to reduce police use of force. *Ann. Am. Acad. Polit. Soc. Sci.* 687 (1), 124–145.
- Wood, J., Fleming, J., Marks, M., 2008. Building the capacity of police change agents: the nexus policing project. *Polic. Soc.* 18 (1), 72–87. <https://doi.org/10.1080/10439460701718583>.
- Youth.gov. (n.d.). Youth involved with the juvenile justice system. Interagency Working Group on Youth Programs. Retrieved from <https://youth.gov/youth-topics/juvenile-justice/youth-involved-juvenile-justice-system>.