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Recognizing and responding to Traumatized Youth: preliminary results and implications for police trainings

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ABSTRACT

This research study analyzed 944 pre-training and 871 post-training survey responses from a youth-specific in-service police training. Before training, police largely had negative views on youth, but are interested in improving their knowledge and interaction skills with youth. Post-training, police demonstrated significant improvement in their self-skill ratings and acknowledged various behavior-related changes they planned to make when interacting with youth. Patterns in responses also emerged based on officer characteristics. Training appears helpful in changing youth-related knowledge, beliefs, and skills in officers and to match the expectations or desires of officers receiving the training. The results from these training surveys highlight unique opportunities for future investigation and practice, such modifications to training content and delivery, and for policy initiatives, including consistently integrating youth training into police education.

Text

Police encounters with children and youth are not uncommon, whether through informal stops or formal arrests, and can have significant immediate and long-term consequences on child wellbeing. Youth (specifically, 15–19 year olds) are the most likely age group to have contact with police and to have contact for the commission of a crime (Development Services Group, Inc, 2018; Forman, 2004; Holder et al., 2009; Murphy, 2013; Richards, 2011). While juvenile arrest rates overall are at all-time lows and are generally significantly lower than adult arrest rates, children under the age of 18 account for a disproportionate percent of arrests in several crime categories, including 'index property crimes such as arson, burglary, larceny-theft, and motor vehicle theft; violent index crimes such as robbery; and offenses such as vandalism and disorderly conduct' (Development Services Group, Inc, 2018, p. 3). In 2019, almost 700,000 arrests were made for children 10–17 years of age; this figure does not include other informal encounters such as stop and frisk, warn and release, witnessing parent arrest, sweeps, and school-police interactions (Office of Juvenile Justice and Delinquency Prevention, 2019). Youth with a history of trauma have even higher rates of police interaction over their lifetime compared to youth without a history of trauma (Duke et al., 2009). Further, youth of color are disproportionately stopped, questioned or otherwise engaged by police for formal and informal purposes (Friedman et al., 2004; Holder et al., 2009; Thurau, 2009). Youth and adolescent interaction with police are unique and, when not approached in a developmentally-sensitive manner, can have detrimental consequences in adulthood and for communities and society (Broaddus et al., 2013; Crosby, 2016; Del Toro et al., 2019; Jones, 2014).

Adolescence is a critical time for cognitive, social, and emotional development (Richards, 2011; Steinberg, 2005). Youth begin to learn the consequences of their behavior, refining their risk-taking and decision-making skills (Richards, 2011; Scott & Steinberg, 2008; Steinberg, 2005). This trial-and-error process of development is often perceived as youths' immaturity, impulsivity, unpredictability, emotional lability, short-sightedness, and vulnerability to peer pressure (Bateson et al., 2020; Crosby, 2016; Richards et al., 2019; Scott & Steinberg, 2008; Steinberg, 2005, 2009). Authority figures often misconstrue these developmentally-appropriate behaviors as disrespectful or threatening and react negatively to youth, and disproportionately negative for youth of color (Crosby, 2016; Fagan & Tyler, 2005; Murphy, 2013; Richards, 2011).

The combination of youths' misunderstood behaviors, based on typical adolescent cognitive and emotional development, police's preconceived opinions and expectations of the youth's demeanor, actions, attire, age, and race, and historically negative interactions with police, and subsequent negative opinions of police, should be fully considered as police respond to youth-involved situations (Brunson & Pegram, 2018; Friedman et al., 2004; Goodrich & Anderson, 2014; Hinds, 2007). However, rather than approaching youth with more sensitivity and developmentally-informed tactics, police tend to be less tolerant of youth than adults (Brunson & Pegram, 2018; Hinds, 2007). Given limited knowledge on youth development and behavior and previous negative experiences with youth, police are more likely to expect tense interactions or non-compliance from youth, decreasing officers' tolerance of youth over time (Thurau, 2009). Police tend to have higher rates of use of force by police on youth compared to adults, causing emotional distress and possible trauma, in addition to physical harm, for youth (Jackson et al., 2019; Morrow et al., 2018). Yet, most police engagement with youth is informal (e.g. redirecting youth to not gather in locations), meaning the stops do not lead to a formal arrest (Hinds, 2007; Murphy, 2013).

From the perspective of youth, these stops tend to undermine their confidence and trust in police authority. For example, about two-thirds of youth stopped by police feel disrespected in their encounters (Friedman et al., 2004; Holder et al., 2009; Jones, 2014; Murphy, 2013). Studies with youth explore the relationship between perceived fairness in the treatment by police and community members' trust in the legal system and police authority (Cavanagh et al., 2020; Geller & Fagan, 2019; Reisig & Lloyd, 2009). If youth perceive police as being unfair or disrespectful, they are often less compliant and have a higher likelihood of arrest, compared to adults with the same offense, and report greater legal cynicism (i.e. perceive the legal system as being unfair, untrustworthy, and/or unresponsive; Crosby, 2016; Friedman et al., 2004; Geller & Fagan, 2019; Reisig & Lloyd, 2009). One study by Murphy (2013) found that youth place greater importance on fair and equitable policing practices than adults, indicating the importance of fostering positive police-youth relationships as a foundation to stronger life-long relationships with police.

Adults with frequent police contact during their youth are less likely to cooperate with or support the police and have increased life-time engagement in criminal activities, higher rates of re-offending, and mistrustful attitudes towards authority that contribute to negative future interactions with or avoidance of police (Crosby, 2016; Friedman et al., 2004; Geller & Fagan, 2019; Goodrich & Anderson, 2014). Future interactions with police are more likely to be negative and community-police collaboration is less likely to occur, ultimately decreasing public safety (Broaddus et al., 2013; Richards, 2011). Collectively, these negative interactions with, perceptions of, and subsequent criminal intervention for youth is costly, more so than adult criminal processes, due to the complex, developmental needs of justice-involved youth (Broaddus et al., 2013; Richards, 2011). In addition, negative police-youth interactions can serve as the impetus for, or at least contribute to, major life-long social, financial, and quality of life challenges that impact young people, communities, and society overall (Broaddus et al., 2013; Del Toro et al., 2019; Jones, 2014).

Conversely, many adults with positive perceptions of police cite positive interactions with police during their adolescence (Fine, et al. 2020; Fine, Padilla, and Tom, 2020; McLean et al., 2019). Youth who perceive positive, personal, and fair interactions with police tend to report less legal cynicism and tend to re-offend less than youth with greater legal cynicism (Cavanagh et al., 2020; Geller &

Fagan, 2019; Hinds, 2007). Further, youth who report police as fair are more willing to support policing in their community (e.g. reporting crime; Reisig & Lloyd, 2009). Fair police procedures, as described by youth and police, include providing youth opportunities to voice their opinions before decisions are made and the use of neutral and consistent approaches that convey dignity and respect (Hinds, 2007). By implementing fair and just interactions with youth, police have unique opportunities to support police legitimacy that could have positive implications in adulthood and for the community (Hinds, 2007). However, police tend to have limited training on youth or how to formally interact in youth-specific situations that are perceived as fair and impartial (Strategies for Youth, 2013; Thurau, 2009)

Despite the prevalence and impact of police encounters with youth, few studies have systematically explored police opinions on youth or the impact of youth-specific training (Bolzan & National Youth Affairs Research Scheme (Australia), University of Western Sydney & Childhood and Youth Policy Research Unit, 2005; Ellem & Richards, 2018; Goodrich & Anderson, 2014). In a qualitative study by Bolzan and National Youth Affairs Research Scheme (Australia), University of Western Sydney & Childhood and Youth Policy Research Unit (2005), when asked to describe young people, police expressed the most negative perceptions of youth compared to other community members (e.g. parents, teachers, store managers, policy makers, youth workers), describing youth as having limited values, lacking morals, and being easily influenced by peers. Police acknowledged that their opinions might be influenced by the type of young people they interact with (i.e. youth or young adults in trouble). Other research indicates police view youth as in need of intervention or help, rather than strictly negative (Richards et al., 2019). Police also tend to perceive the appearance and actions of youth as intentionally disrespectful, although much of this is likely attributable to youth developmental and/or cultural characteristics, and use it to rationalize initiating contact with youth (Brunson & Pegram, 2018). Negative opinions of youth by police are exacerbated for youth in racial minority groups, highlighting layers of potential biases by police (e.g. racial and age discrimination) (Broaddus et al., 2013; Brunson & Pegram, 2018; Goodrich & Anderson, 2014; Jackson et al., 2019). Together, police's personal and professional responses to youth contribute to largely negative interactions (Goodrich & Anderson, 2014).

It is posited here that practical solutions, such as police training and policies, need to be implemented as part of a comprehensive effort to evoke change in police culture and evaluated for their effectiveness in reducing unnecessary police engagement and supporting positive interactions between police and youth to minimize the negative outcomes. Police officers, as the gatekeepers to youth entering the justice system, would likely benefit from education on adolescent development and youth-specific approaches for effective interactions (e.g. resolve current activity and reduce further delinquency) and to establish positive relationships within the community (Forman, 2004; Hinds, 2007; Richards et al., 2019). Despite the existence of a juvenile court, the criminal system remains tailored to adults, such that most police officers do not receive training on youth-specific strategies (Bostic et al., 2014; Strategies for Youth, 2013; Thurau, 2009). Consent decrees, as part of resolving legal actions with police departments, have been used as structured opportunities to implement, monitor, and maintain changes to procedures involving youth (Brunson & Pegram, 2018; Thurau, 2009). Typically, consent decrees include the implementation of training to increase police knowledge of and skills in a particular area of need (Brunson & Pegram, 2018).

Training on youth interactions can be leveraged under a consent decree (Brunson & Pegram, 2018). For trainings to improve positive police-youth interactions and youth outcomes, previous studies have shown, or recommended based on results, that trainings include foundational information on the following topics: developmentally appropriate behaviors of adolescents (e.g. emerging skills in self-control and decision making) and how these factors influence youths' interactions with and responses to police; demographic cultural factors and the historic relations between law enforcement and youth relevant and specific to the community and department; evidence-based developmentally appropriate and trauma-informed responses to youth; and the role of police

officers' biases towards youth of racial, ethnic, or gender minority groups and how to reduce these biases to treat youth neutrally and consistently (Bateson et al., 2020; Crosby, 2016; Hinds, 2007; Ko et al., 2008; Steinberg, 2009; Thurau, 2009). Providing police resources during training on how and where to refer youth, particularly for youth with trauma, can increase the use of proactive and preventative diversion strategies, decreasing arrest rates (Ko et al., 2008; Strategies for Youth, 2013; Thurau, 2009). Trainings that include the translation of officers' knowledge, such as modeling, scenario-based exercises, on-the-job follow-up after the training, and opportunities to interact with you in positive-low risk contexts increase the likelihood of police using trained strategies (e.g. communication, de-escalation) that are known to support positive police-youth interactions (Friedman et al., 2004; Goodrich & Anderson, 2014; Lee et al., 2017; Richards et al., 2019; Strategies for Youth, 2013; Thurau, 2009).

When trained officers use strategies to deter or de-escalate negative interactions, various negative youth outcomes are reduced and more positive relationships are established between youth and police (Herz, 2001; LaMotte et al., 2010; Murphy, 2013). De-escalation strategies reduce the use of force by police, decreasing physical harm to youth and police, and afford police time to collect information and make decisions, decreasing rates of arrests, charges, detention, and recidivism (Herz, 2001; Murphy, 2013). Two studies on training outcomes (i.e. Herz, 2001; LaMotte et al., 2010) systematically revealed that officers: 1) increased their knowledge of youth development and behavior (11% increase), 2) changed the view of their role with youth as proactive and helpful (12% increase), and 3) reported more favorable attitudes towards youth (2–11% improvement). These more positive attitudes of police likely contribute to more favorable interactions in future encounters (Brunson & Pegram, 2018; Goodrich & Anderson, 2014; Herz, 2001). The benefits of these positive outcomes include more positive collaborations between communities and police (e.g. more positive views of police by community members), leading to more effective policing (e.g. efficient and reliable investigations) (Herz, 2001; Lee et al., 2017; Tallon et al., 2016). A list of police youth trainings, based in the United States, as discussed in published, peer-reviewed studies, is provided in Tables 1. This list is not exhaustive, rather it serves to provide examples and short descriptions of training approaches and compare other training outcomes to those discussed in the present study. The trainings vary in length (e.g. 5.5 hours (Effective Police Interactions with Youth, LaMotte et al., 2010) to 2 days (Policing the Teen Brain by Strategies for Youth (full training), Aalsma et al., 2018), format (e.g. lectures, role-play, discussion, community service projects), and content focus (e.g. fostering opportunities for youth and police to interact (Connecticut's Side-by-Side Police and Youth Interaction Programs, Lee et al., 2017), increasing officer's awareness of youth needs and behaviors (e.g. Police and Youth Interaction Programs, Goodrich & Anderson, 2014).

Although police education appears effective in reducing negative outcomes between youth and police, more evidence is needed, particularly on the provision of police training under consent decrees (Brunson & Pegram, 2018; Ellem & Richards, 2018; Ko et al., 2008). With limited evidence, the impact of consent decrees on communities and police organizations is poorly understood (Brunson & Pegram, 2018; Richards et al., 2019). Research on the changes associated with the policies and procedures modified by the consent decree is critical to systematically guide departmental policies to improve outcomes (Brunson & Pegram, 2018; Richards et al., 2019).

While it has been well-established that youth, generally hold negative attitudes towards police and police-youth interactions are typically negative, little quantitative evidence exists that examines the impact of training on the attitudes or skills of police interactions with youth (Goodrich & Anderson, 2014). Further, police behavior and changes in behavior due to training have been under-investigated, limiting the generalizability of training to real-time police-youth encounters (Herz, 2001; LaMotte et al., 2010; Strategies for Youth, 2013). Previous methodologies in the few studies investigating training effectiveness have been restricted to close-ended questions, whereas open-ended responses could capture change in unexpected areas, providing further insight (Goodrich & Anderson, 2014). Of note, the literature and trainings presented in this paper is

Tables 1. Police trainings on youth.

Training (Citation)	Location	Format	Content Focus	Outcome Measure(s)	Participants Total Trained	Participants Included in Analysis
Baltimore Outward Bound Police Insight Program (Broaddus et al., 2013)	Baltimore, MD	1 day; experiential team building activities between officers and students; mandatory participation for officers	based on Intergroup Contact Theory; aims to reduce stereotypes held by both officers and youth	Observed 2 programs days and took detailed notes on participant behaviors and comments; interviewed participants post-program	52	52
Connecticut's Side-by-Side Police and Youth Interaction programs (Lee et al., 2017)	Connecticut	Several sessions with same participants together; team-building activities, events, and a community service project between officers and youth	Provides opportunities for positive police/ youth interactions to increasing police comfort and experience interacting with youth	Pre- and post-surveys measuring youth attitudes toward police; youth prior experience with police; police attitudes toward youth; and overall satisfaction with program	110	110
De-Escalating Juvenile Aggression Training Program (Herz, 2001)	Sarpy County, Nebraska	8 hours (1 day); lecture and role play; 3 groups of officers	the developmental factors related to juvenile aggressive behavior; how to handle aggression; and verbal skills necessary to de-escalate aggression	Pretest surveys given to both trained and untrained officers; posttest surveys given to trained officers; short survey given to both groups five months later; trained officers participated in short interviews	38	38
Effective Police Interactions With Youth (LaMotte et al., 2010)	Connecticut	5.5 hours; lecture, activities, and discussion	Increase police awareness of disproportionate minority content and knowledge of youth behavior and strategies for effective youth interactions	Both untrained and trained officers completed a pretest survey and a posttest survey several months later; trained officers also completed a survey immediately after training	301	299
Police and Youth Interaction Programs (Goodrich & Anderson, 2014)	Connecticut	multiple sessions between youth and officers ranged from 5 to 26 times; included a team-building component, leadership opportunities for youth, and a community service project; programs were required to have some at-risk youth; frequency, length, and size of program depended on specific communities	Positively improve the attitudes of police and youth in a non-law enforcement environment; promote positive youth development by engaging police in community activities; increase the number of officers comfortable interacting with youth	Pre-and post-surveys designed to measure changes in the attitudes and opinions of police and youth toward each other	49	35

(Continued)

Tables 1. (Continued).

Training (Citation)	Location	Format	Content Focus	Outcome Measure(s)	Participants Total Trained	Participants Included in Analysis
Policing the Teen Brain by Strategies for Youth (full training) (Aalsma et al., 2018)	Indiana	2 days; voluntary participation; lecture and role-play; 16–30 officers per session	Adolescent development, trauma and behavioral health	Pre- and post-surveys taken immediately before and after training	232	232
Recognizing and Responding to Traumatized Youth by Strategies for Youth (present study)	Cleveland, OH	3 hours; Lecture and discussion; Class size: 43–50 officers	Child and adolescent development, mental health conditions, adverse childhood experiences and trauma exposure, and how to respond to challenging behaviors, in crisis, including age-appropriate de-escalation and other trauma-informed strategies	Pre- and post-training surveys tailored to training	1375	944

largely from research conducted in the United States as many factors impacting police-youth interactions can be influenced by specific countries' culture, laws, and practices.

Research is needed on understanding the components and determinants of effective law enforcement training to ensure public resources (e.g. time, financial, personnel) are used prudently and in a way that supports positive youth, police, and community outcomes (Thurau, 2009). Given the high level of contact between youth and police and the damaging effects of negative youth-police interactions, evidence-based solutions are essential to support effective policing and safe communities (Richards et al., 2019).

Current study

Names and identifying details of the participating community and police agency have been removed from the description of the training per the agreement of all parties. The city entered into a consent decree with the United States Department of Justice (USDOJ) after an investigation found a pattern or practice of excessive force by the division of police (DoP) in violation of the Constitution. A committee was created as part of the USDOJ consent decree and recommended the inclusion of youth-specific practice guidance in the DoP's revised crisis intervention team (CIT) policies and police training as part of ongoing police reform efforts. CIT policies with age-appropriate guidance were adopted three years after the initial consent decree. The committee engaged Strategies for Youth (SFY) to develop a youth-specific, in-service police training for all police in the division to support the implementation of this policy.

SFY is a 'policy and training organization dedicated to improving police/youth interactions through police training, proactive use of multi-disciplinary approaches, outreach programs for youth, community engagement, to problem solve and build relationships between police and youth.' (Strategies for Youth, n.d.). One of SFY's signature trainings for law enforcement, 'Policing the Teen Brain', is typically offered on an ad-hoc basis over two days and addresses key components of youth development and interactions, highlighted in Tables 1 (Bostic et al., 2014; Strategies for Youth, n.d.). 'Policing the Teen Brain' is an intensive training that provides in-depth information on youth development, youth behavior, youth in crisis, and youth with a history of trauma, as well as approaches and strategies for police in their interactions with youth and opportunities to practice or role-play skills. The organization has found that training law enforcement to adopt developmentally appropriate, trauma-informed, racially equitable approaches to interacting with youth can decrease youth arrest rates and improve youth interactions with police (Bostic et al., 2014).

SFY condensed the 16-hour training into a three-hour version, 'Recognizing and Responding to Traumatized Youth' specifically for the DoP discussed in this study. SFY worked with the committee created under the consent decree to design a practical in-service training on youth for all police officers in the division, given logistical constraints (e.g. DoP only had a 3-hour time block available to train officers). SFY utilized key components of the 'Policing the Teen Brain' training (e.g. introduction to youth development, basic strategies to successfully interact with youth) to create a three-hour introductory training. The three-hour youth in-service training addressed the basics of child and adolescent development as a foundation for recognizing and responding effectively to youth exposed to trauma and in crisis. The training provided specific strategies for police to use in their interactions with youth, including the 'Behavior-Language-Timing' technique, specific to SFY. In this approach, officers are 'encouraged to approach the adolescent in an emotionally neutral manner and to focus on their own behaviors, language, and timing and those of youth' (p. 2, Bostic et al., 2014). Within this technique, officers are taught how to 1) adapt their initial physical approach, verbal messages, and a slower pace in a manner developmentally appropriate for youth, 2) recognize physical and verbal cues from youth that could indicate a potential escalation in behavior, and 3) respond using physical and verbal

strategies that are fair, easily understood by youth, and could possibly de-escalate a tense situation.

This manuscript presents the findings of the pre- and post-training surveys conducted during the SFY youth training. The research formulates questions about the trainees and their experience based on the content and format of the surveys. Specifically, the researchers asked:

(1) What are the trainees' perceptions of, knowledge of, and skills working with youth? How do trainees' responses change as a result of the training?
(2) What are trainee's interests in, feedback on, and take-aways from the training?

Methods

Participants

A total of 944 pre-training surveys and 871 post-training surveys were included in the analysis, a 68.65% and 63.34% response rate, respectively. Trainees had an average of about 15 years of experience in police work (15.57 years for pre-training respondents; 15.80 years post-training for post-training respondents; range = .50–38 years). Years of experience were also categorized and are presented in Tables 2. Current role in DoP was also categorized into 5 types of positions based on survey responses and guidance from a DoP partner to develop groupings of roles used in police work: 1) patrol officer (i.e. officers, administration, other), 2) specialized unit/detective, 3) supervisor (i.e. sergeant, supervisor, captain, lieutenant), 4) community policing (school resource officer, community relations officer), and 5) command staff. 'Patrol officer' was the most common current role, reported by 70.96% of survey respondents (both pre- and post-training respondents; N = 1288). The frequency of all 'current roles' and other demographic characteristics are presented in Tables 2. No significant differences were found between pre- and post-training survey respondents' demographic characteristics. T-test and Chi-Square statistics are reported in Tables 2.

Survey measures

Before and after the training session, training participants were given a few minutes to complete an anonymous survey via pen and paper. The surveys designed by SFY for their full, two-day training were revised to gain general feedback on the shortened training to inform future education. The single page surveys included open-ended and Likert rating scale questions on knowledge of youth (foundational knowledge and personal beliefs), personal skills related to youth interactions, describing youth (pre-only), expectations for the training (pre-only), expected personal change

Tables 2. Demographics responses from pre- and post-training surveys.

Characteristics	Category	% (Frequency)		Statistical Comparison of Pre-Training and Post-Training Respondents
		Pre- Training Respondents	Post-Training Respondents	
Years of Experience	< 5 years	19.10% (179)	18.12% (156)	$t(1795) = 0.57, p = .572$
	5- <10 years	13.34% (125)	13.72% (118)	
	10- <15 years	13.87% (130)	13.72% (118)	
	15- <20 years	8.86% (83)	9.30% (80)	
	20- <25 years	23.05% (216)	22.09% (190)	
	>25 years	21.77% (204)	23.02% (198)	
Role in Police	patrol officer	72.23% (679)	70.90% (609)	$X^2 (4, 1799) = 0.74, p = .047$
	specialized unit/ detective	12.98% (122)	13.50% (116)	
	supervisor	9.47% (89)	9.90% (85)	
	community policing	3.40% (32)	3.96% (34)	
	command staff	1.92% (18)	1.75% (15)	

after the training (post-only) and feedback on helpful training components, suggested improvements for the training, and overall usefulness of training (post-only). Pre- and post- surveys could not be matched by respondent or by training sessions as the surveys did not include identifiable information. Additionally, trainer characteristics were not documented for the sessions. Survey items are listed in Appendix 1.

Training procedure

The SFY three-hour training for the DoP, 'Recognizing and Responding to Traumatized Youth', consisted of PowerPoint slides, scenario videos, and handouts presented in-person by the trainers, in a lecture and discussion format, completed in one session. On average, class sizes consisted of 43 to 50 officers. Intentionally, rather than using trainers from the police academy, the training was provided by staff with expertise in working with young people from local community child mental health provider agencies, along with training staff. The rationale was that as trainers, these experienced providers could respond to questions about child and adolescent development more appropriately as well as help to foster connections between law enforcement and community based agencies. SFY conducted a single train-the-trainer session to equip the volunteer community trainers with the 3-hour curriculum and materials (e.g. videos, discussion prompts), and strategies for engaging police officers in the training. The videos were short scenarios to illustrate and apply techniques presented in the lecture through an interactive format. Questions and discussion were encouraged throughout the training, with specific learning activities embedded in the training curriculum. Ultimately, 35 sessions were held from July to November 2019 to train the majority of the DoP force, about 1,375 DoP officers from various precincts. Any officer who completed a pre- or post- training survey was included in this study. Trainer characteristics were not collected during the training and were therefore unavailable to the authors of this paper.

Statistical methods

This study was granted exempt status by the Institutional Review Board and survey data was shared by DoP to the researchers. Data was entered and prepared for analyses by two undergraduate students with minors in child studies. Open-ended survey responses for the following questions were coded for analysis: 'What are you hoping to gain from this training?'; 'In your experience, what four words best describe youth in your community?'; 'What concepts in the training were helpful?'; 'How would you improve this training?'; and 'What are you going to change as a result of this training?'. The two students were trained on the coding process by the first author. One student coded pre-training data and the other coded post-training data. Neither were aware of the research questions to reduce confirmation bias in coding. The first author also served as a reliability coder for the first 12.67% of the data (N = 230 records). Before the remaining data was coded, discrepancies were discussed between the coders, and 100% intercoder agreement was established for these records. The resolution to any consistent discrepancies were noted in the code book. The first author then served as a second coder for 16.58% of additional records (N = 300). The coding scheme is available upon email request to the corresponding author.

All data was analyzed using JASP 0.9.20 for Windows (JASP Team, 2020). Frequencies and percentages were reported for categorical variables. Means, standard deviations, and ranges were reported for continuous variables. Independent samples t-test were conducted to compare pre-training scores and post-training scores (i.e. Likert scales) as survey results were not matched per participant. Independent samples t-tests were used to allow for more powerful comparison of individual Likert items (i.e. items of the scale), given the large sample, and of these items to the results of the Likert scale comparisons (Carifio & Perla, 2007) Cohen's d, η^2, f^2, and Cramer's V effect sizes were calculated for all significant analyses and interpreted using guidelines by Cohen (1988). Linear regression, ANOVAs, correlations, and chi-square analyses were conducted to determine associations between pre- and post- knowledge and self skill ratings and 1) years of

experience, 2) role in DoP, and 3) ways to describe youth (i.e. positive or negative youth descriptors).

Change scores and associations with pre- and post-knowledge and belief scores do not include the fourth item on the survey, regarding adolescents' racial and cultural background. The item was originally worded as a negative (i.e. 'adolescents' racial and cultural background don't affect the way they respond to police'). To allow for comparisons in this evaluation, the item was reverse scored to be on the same scale as the other questions, but due to the negative wording in the original survey (i.e. opposite to all other survey questions), researchers were concerned that participants likely rated the item on an incorrect or opposite scale, thus impacting the validity of the results. Of note, the last item on the post-self-skills rating regarding the Behavior-Language-Timing technique was not included in the pre-training ratings, as this concept is specific to the SFY training and trainees would not be expected to know this technique prior to the training.

Results

Reliability

The first author served as a second coder for the first 12.67% of the data (N = 230 records). Of the first 230 records coded by the first author and an undergraduate student, discrepancies were found in 16 records (6.96%). Of the additional 300 records (16.58%) coded by the first author and an undergraduate student, discrepancies were found in 9 records (3.00%).

Trainees' pre-training interest in specific skill-building

Of the 686 responses to 'what are you hoping to gain from this training?', trainees most often responded with a desire to gain 'knowledge' (46.06%, N = 316) or 'strategies and actions' (38.48%, N = 264). 'Youth development' and 'trauma' were the most common 'knowledge' topics that trainees wanted to learn more about. 'Strategies and actions' that trainees wanted to learn more about specifically included: ways to help youth in crisis or who have experienced trauma; how to communicate with youth; and ways to better perform their job. Less common responses for what they 'hope to gain' included 'anything' (5.2%), 'not sure' (5.4%), and 'nothing to gain' (3.8%).

Perceptions of 'Youth' pre-training

Of the 2,472 words shared by 772 trainees in response to 'In your experience, what four words best describe youth in your community?', 21.28% (N = 526) were categorized as 'positive', 17.39% (N = 430) as 'other/neutral', and 61.32% (N = 1516) as 'negative'. Only 21.50% of respondents

Tables 3. Words to describe youth pre-training.

Category	Frequency	Commonly Used Words
Positive[a] Youth[d]	21.03% (520)	Active; curious;
Positive[a] Contextual[e]	0.24% (6)	Prepared; family oriented; look up to police
Other[b] Youth[d]	16.10% (398)	Young; lost; scared
Other[b] Contextual[e]	1.29%(32)	Poor; in need
Negative[c] Youth[d]	44.90% (1110)	Disrespectful; lazy; angry
Negative[c] Contextual[e]	16.42% (406)	Entitled; misguided; unsupervised
Total	2472	

[a] 'positive' = always a positive connotation when used in everyday language about a young person
[b] 'other' = not able to be identified as positive or negative; context specific or neutral in everyday language in reference to a young person
[c] 'negative' = always a negative connotation when used in everyday language about a young person
[d] 'youth' = a young person's characteristic that can or cannot be observed; relates to their behavior, mindset, or a youth identity
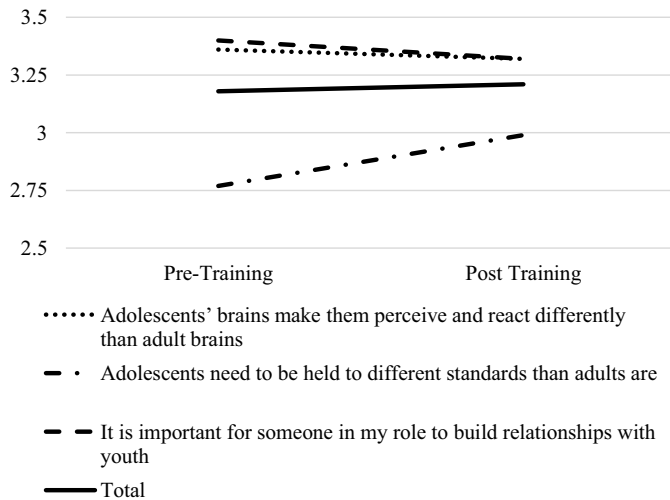[e] 'contextual' = relating to variables outside of the young person; can include influence of parents, neighborhoods, or other contexts that the youth likely did not have control over

Tables 4. Pre- and post-survey ratings (1 = strongly disagree, 4 = strongly agree).

	Pre-Training Rating	Post-Training Rating	Change from Pre- to Post- Training Rating		
	Mean (SD)	Mean (SD)	t value[a]	p	d
Knowledge and Beliefs Prompt					
Adolescents' brains make them perceive and react differently than adult brains	3.36 (0.57)	3.32 (0.55)	−1.59	.111	n/a
Adolescents need to be held to different standards than adults are	2.77 (0.68)	2.99 (0.66)	6.79	< .001	.328
It is important for someone in my role to build relationships with youth	3.40 (0.56)	3.32 (0.55)	−3.22	.001	−.144
Knowledge & Beliefs Total	3.18 (.43)	3.21 (.45)	1.45	.150	n/a
Self-Skills Prompt					
I have the skills necessary for interacting effectively with traumatized youth	2.79 (0.62)	3.12 (0.52)	12.14	< .001	.577
I feel equipped to help youth regulate their behavior	2.72 (0.60)	3.01 (0.51)	9.77	< .001	.521
I feel equipped to prevent youth from overreacting in tense situations	2.62 (0.90)	2.96 (0.54)	10.69	< .001	.458
I feel equipped to recognize and work with you who have experienced trauma	2.65 (0.65)	3.03 (0.53)	13.57	< .001	.641
The Behavior-Language-Timing idea will help me be more effective in my interactions with youth[b]	n/a	3.07 (0.53)	n/a	n/a	n/a
Self-Skills Total	2.70 (.54)	3.04 (.43)	14.76	< .001	.556

[a]An independent samples t-test was conducted to compare pre-training scores and post-training scores as survey results were not matched per participant.
[b]This item was not included on the pre-training survey and a change could not be calculated.

Figure 1. Knowledge and beliefs scores for pre- and post-training.

(N = 166) shared mostly positive words as their response (i.e. 2 or more of the 4 words shared were 'positive'). The most commonly used words to describe youth were categorized as 'negative' and included: disrespectful (7.04%, N = 174), lazy (2.55%, N = 63), entitled (2.47%, N = 61), angry (2.35%, N = 58), and lost (2.22%, N = 55). Tables 3 presents additional categories, frequencies, and examples of words used to describe youth.
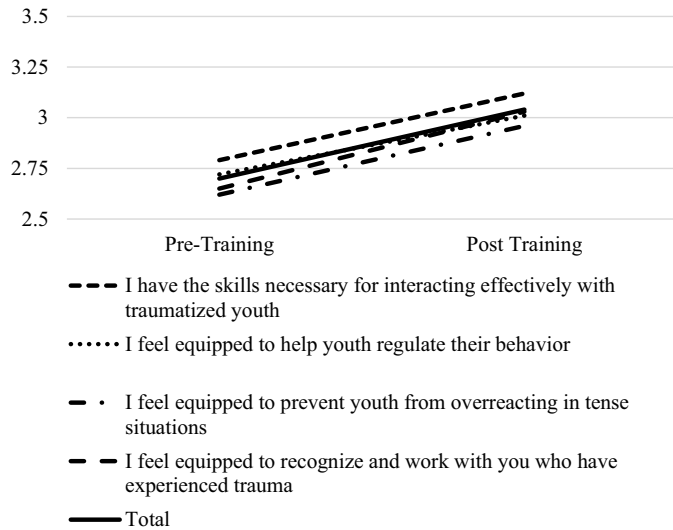
Figure 2. Self-skills scores for pre- and post-training.

Trainees' ratings on personal knowledge and skills

Tables 4 presents the complete results for the pre- and post- survey questions asking trainees to rate 1) knowledge and 2) self-skills on a 4-point Likert scale. Figures 1 and 2 visually depict the results. The average pre-survey rating of knowledge was 3.18 (SD = 0.44; between 'agree' and 'strongly agree'). The average post-survey rating of knowledge was 3.21 (SD = 0.45; between 'agree' and 'strongly agree'). The average pre-survey rating of self-skills was 2.70 (SD = 0.54; between 'disagree' and 'agree'). The average post-survey rating of self-skills was 3.04 (SD = 0.43; between 'agree' and 'strongly agree').

The total knowledge ratings did not differ from pre- and post- surveys [$t(1810) = 1.45$, $p = .150$], indicating little to no change in overall knowledge due to the training. Two items, however, did change significantly from pre- to post-training. Post-training, participants reported a significantly greater recognition that adolescents need to be held to different standards, with a small to medium effect [$t(1775) = 6.79$, $p < .001$, $d = 0.328$]. Unexpectedly, participants reported less importance in building relationships with youth after the training, with a negligible to small effect, [$t(1794) = -3.22$, $p = .001$, $d = -.144$].

Greater endorsement of self-skills in working with youth was found after participating in the training, with a medium effect [$t(1813) = 14.76$, $p < .001$, $d = .556$]. Participants endorsed significantly greater skills in all four areas: 1) interacting with youth with trauma, with a medium effect [$t(1771) = 12.14$, $p < .001$, $d = .577$]; 2) helping youth regulate their behavior, with a medium effect [$t(1549) = 9.77$, $p < .001$, $d = .521$]; 3) preventing youth over-reaction, with a medium effect [$t(1765) = 10.69$, $p < .001$, $d = .458$]; and 4) recognizing and working with youth with trauma, with a medium to large effect [$t(1764) = 13.57$, $p < .001$, $d = .641$].

Post-training expected behavior change & feedback

When asked what they were going to change as a result of this training, 657 of the trainees responded that they planned to change their personal behavior (63.01%). Many individuals shared anticipated modifications to their approach with youth including: slowing their actions (physical and speaking rate); using a calmer tone of voice; giving the youth greater time to respond; and acting with more patience. Other personal behavior changes are reported in Tables 5.

Overall, respondents rated the usefulness of the training as 2.69 (SD = .81; between 'somewhat useful' and 'very useful'). The most helpful concept from the training, reported by 659 trainees was

Tables 5. Post-training change & feedback.

Domain	Responses	% of responses
Training concepts reported as helpful	Factual information (e.g. how the brain develops through adolescence)	37.78%
	'Everything' (i.e. all components were helpful)	20.188%
	Instruction on how to act around or interact with youth	19.12%
	How to recognize trauma in youth	13.51%
	'Nothing' (i.e. nothing was helpful)	6.22%
	Provision of resources or programming to provide/refer youth	3.19%
Suggestions for improvement of training	Change of format or delivery (e.g. shorter duration, greater use of videos)	37.23%
	'Nothing' (i.e. no suggestions)	32.63%
	Use of more examples or applications (e.g. having youth and police share experiences, role playing)	15.74%
	More content or factual information	7.68%
	Technical (e.g. resolve technological difficulties)	6.72%
Change due to training	Personal behaviors (e.g. slowing actions, calmer tone, more patience)	63.01%
	'Nothing' (i.e. no changes to practice)	18.41%
	Considering and looking for signs of trauma in youth	8.52%
	Considering facts about youth during interactions (e.g. developmental stage)	6.85%
	'Everything' (i.e. change all aspects of practice)	1.98%
	Providing or referring to resources or programming in the community	1.22%

factual information on teen development (e.g. instruction on how the brain develops through adolescence), endorsed in 37.78% of the open responses (See additional responses in Tables 5). Although 32.62% of trainees said nothing needed to be improved about the training, suggestions for training modifications included: changing the format or delivery (e.g. shorter duration, greater use of videos) (37.24%, N = 194); using more examples or opportunities for applied learning (e.g. having youth and police staff share their experiences, role playing scenarios as small groups) (15.74%, N = 82); including more content or factual information within the training (7.68%, N = 40); and resolving technical issues (e.g. inability to play videos due to age of computers) (6.72%, N = 35). About one third of respondents stated they would change nothing about the training (32.63%, N = 170).

The role of trainee characteristics

Three associations were significant with years of experience: 1) pre-survey self-skill score, 2) post-survey self-skill score, and 3) words to describe youth. Greater years of experience was significantly associated with lower self-skill ratings pre- and post- training [$F(1, 930) = 9.68$, $p = .449$ and $F(1, 854) = 15.42$, $p < .001$], respectively. Greater years of experience was also significantly associated with more negative average ratings of words to describe youth [$F(1, 767) = 5.89$, $p = .015$]. That is, police with greater years of experience were more likely to use words categorized as 'negative' (i.e. disrespectful, uncontrollable) to describe youth, when compared to police with fewer years of experience.

Five associations were significant with current role: 1) pre-training knowledge score, 2) post-training knowledge score, 3) pre-training self-skills score, and 4) personal change due to training. Patrol officers were more likely to have lower pre- and post-training knowledge with small effects [$F(4) = 4.64$, $p < .001$, $\eta^2 = .019$]and [$F(4) = 3.22$, $p = .012$, $\eta^2 = .015$] respectively, and lower pre-training self-skill ratings than supervisors with a small effect [$F(4) = 4.64$, $p < .001$, $\eta^2 = .019$]. Patrol officers were more likely to state they would change 'nothing' than other groups with a small effect [$X^2(24) = 38.46$, $p = .003$, $V = .121$].

The four words respondents used to describe youth were dichotomized to create two groups: 1) individuals who used 50% or more positive words to describe youth; and 2) individuals with less than 50% positive words to describe youth (zero or only one positive word). Since pre- and post-training surveys are not matched by participants, only pre-training measures could be analyzed by their associations with the two groups of words to describe youth. Both pre-training knowledge and beliefs total and pre-training self-skills rating were significantly associated with words to describe

Tables 6. Associations between trainee characteristics and pre- and post- training measures.

Measure	Statistical Relationships		
	Years of Experience	Current Role	Words to Describe Youth
pre-training knowledge & beliefs rating	F (1, 935) = 0.015, p = .901	F (4) = 4.644, p < .001, η^2 = .019	Welch's t (286.5) = −3.627, p < .001, d = −.308
post-training knowledge & beliefs rating	F (1, 855) = .574, p = .449	F (4) = 3.216, p = .012, η^2 = .015	n/a
pre-training self-skill rating	F (1, 930) = 9.679, p = .002, f^2 = .010	F (4) = 4.644, p < .001, η^2 = .019	Welch's t (301.1) = −4.346, p < .001, d = −.364
post-training self-skill rating	F (1, 854) = 15.42, p < .001, f^2 = .018	F (4) = 2.276, p = 0.059	n/a
ratings of usefulness of training	F (1, 748) = 0.78, p = .378	F (4) = 1.277, p = .278	n/a
words to describe youth	F (1, 767) = 5.89, p = .015, f^2 = .013	X^2(4) = 8.32, p = .081	n/a
personal change due to training	F (1, 515) = 0.51, p = .474	X^2(24) = 38.46, p = .031, V = .121	n/a

youth with a small to moderate effect [Welch's t(286.5) = −3.63, p < .001, d = −.308] and [Welch's t (301.1) = −4.35, p < .001, d = −.364] respectively. If individuals had at least 50% or more positive words, they were more likely to have higher knowledge and belief and self-skill ratings pre-training.

Complete results of associations between trainee characteristics are presented in Tables 6.

Discussion

The results of this study provide unique insights on the knowledge, attitudes, and skills of police towards youth and the potential of training to evoke change to support positive police-youth interactions. Research addressing the participants and outcomes of similar police training on youth, including the programs detailed in Tables 1, were used for comparison and to identify the unique contributions of this study to existing evidence. Most studies measured outcomes through similar surveys, before and immediately after training. Herz (2001) and LaMotte et al. (2010) also followed up with participants 5–7 months post-training. Broaddus et al. (2013) only utilized participant interviews to report training outcomes. The sample size of the current study was significantly larger than those reported on in previous studies, ranging from 28–468, even when accounting for only post-training respondents (Aalsma et al., 2018; Broaddus et al., 2013; Goodrich & Anderson, 2014; Herz, 2001; LaMotte et al., 2010; Lee et al., 2017). Demographic characteristics of the participants in this study were comparable to other samples. Lee et al.'s (2017) and Aalsma et al.'s (2018) samples had fewer years of experience, and some samples only included police officers, as opposed to individuals in other roles within the police force (Broaddus et al., 2013; Herz, 2001; LaMotte et al., 2010). The differences in methodologies and trainee characteristics are important to consider in the interpretation of the results of this study and implications for future training.

Participants' pre-training interest and post-training feedback were generally positive and consistent with other studies (Goodrich & Anderson, 2014; Herz, 2001; LaMotte et al., 2010; Lee et al., 2017). The inclusion of open-ended responses in the present study provides insight for future trainings not captured in previous research. On the pre-training survey, participants indicated willingness for growth and self-identified areas for growth (e.g. 'knowledge' and 'strategies actions' in the areas of youth development and trauma). Police interest should be leveraged by focusing trainings on topics self-identified by police and pertinent to their on-the-job experience. Interestingly, after training, trainees in this study most often cited factual information on the developmental science of adolescence as the most helpful part of the training, despite limited improvement in knowledge ratings. Police could be referring to factual information on proven

ways to effectively interact with youth, as opposed to what the researchers categorized as factual information (e.g. developmental milestones) and not captured in the category 'instruction on how to act around or interact with youth' (19.1% of police responses), supporting the use of more robust feedback surveys after future trainings. Lastly, police suggested including youth in future trainings, utilizing video or role-play scenarios, and shortening the duration of the training which were consistent with previous studies (Goodrich & Anderson, 2014; LaMotte et al., 2010; Lee et al., 2017). The time constraints of this version of the training, which ordinarily includes interactions with youth, did not afford the opportunity for youth engagement or extensive role-play, but are important components to include in future trainings, even under time constraints (Lee et al., 2017). By incorporating feedback on previous trainings to future training, police will likely demonstrate greater buy-in for trainings, improving their generalization of training knowledge and skills and ultimately improving interactions with youth.

The words used by trainees to describe youth provide evidence of police's negative perceptions of youth (61% of words were categorized as negative) and were similar to themes found in a qualitative study by Broaddus et al. (2013). When speaking about youth, police stated frustrations with youth and that their daily work doesn't typically afford opportunities for positive interactions (i.e. police only intervene in already negative situations) (Broaddus et al., 2013. Given the many years of experience in the police force held by this sample, the largely negative perceptions are likely influenced by officers' perceived challenges when interacting with youth and highlight the need to provide training early on in their careers, including on-going coaching and support to improve communication and interaction with young people. With more positive, early experiences, police may more readily see opportunities for positive youth interactions (e.g. mentorships), increase positive police and youth relationships, and support positive youth outcomes.

Consistent with the five other studies using surveys to measure change (Aalsma et al., 2018; Goodrich & Anderson, 2014; Herz, 2001; LaMotte et al., 2010; Lee et al., 2017), improvements were observed in knowledge and skills when comparing pre- and post-training results. Initially, trainees presented with a high level of baseline knowledge on youth (3.18 out of 4), also seen in Goodrich and Anderson (2014) results. The knowledge and belief score did not significantly improve with the training, potentially due to focus on attitudes towards youth, rather than assessing factual knowledge (LaMotte et al., 2010; Lee et al., 2017). Trainees' significant change in agreement to hold adolescents to different standards than adults is an important outlier that further emphasizes the importance of including foundational information in trainees to emphasize viewing youth behavior in the light of their developmental stage (Aalsma et al., 2018; Herz, 2001; Strategies for Youth, 2013). Improved knowledge in this specific area is likely a critical component to reducing negative police reactions towards youth and subsequently establishing police legitimacy with youth and positive youth relationships. Unexpectedly, given the intent of the training, participants reported a decreased importance of building relationships with youth after the training, although ratings at both time points were between somewhat agree and strongly agree. Given the negligible to small effect size, this finding could be skewed based on the officers who completed the pre-training survey and not the post training survey (i.e. officers not included in the post-training surveys place greater value on youth relationships). Perhaps, training content related to strategies to work with youth in acute crises was more salient to the officers, rather than the need to build long-term relationships with youth, influencing their response ratings. Increasing the number of Likert responses, matching pre- and post-surveys, and including open-ended questions related to this topic could clarify this unexpected finding.

The significant change in overall skill rating, supported by the open-ended answers to personal behavior changes, indicates that trainees in this study gained practical and applicable skills from the training that they could apply to their daily work. Only one study (Aalsma et al., 2018) which also used the S4Y training, reported on skills development and also found police increased their skills in de-escalation. Herz (2001) reported that, post-training, 'police were more likely to view their role with aggressive juveniles as proactive and helpful' (p. 65). Considering this previous evidence with

the results of the present study (i.e. significant change in skill ratings but no significant change in knowledge scores), trainings for police likely need to include foundational information to support explicit understanding of police's roles with youth, while also providing applied strategies that police can use more readily in youth situations (Herz, 2001; Strategies for Youth, 2013).

The range of years of experience and roles in the police force represented in this sample allowed for additional analyses that afford a deeper understanding of how trainee characteristics can influence training outcomes and how training may be better tailored to meet needs of specific groups (e.g. patrol officers versus community policing). Previous studies by Aalsma et al. (2018), Goodrich and Anderson (2014), LaMotte et al. (2010), and Lee et al. (2017) largely did not find significant differences on outcome measures based on officer characteristics. The results of this study are in contrast to this previous research, indicating that certain groups of police might benefit differently from training or type of training content. Patrol officers, officers with greater years of experience, and officers with more negative views towards youth are likely more reticent to engage in trainings and could benefit from content that incorporates officer buy-in and rapport with trainers (e.g. research evidence on positive impacts of police skills training on youth outcomes). In contrast, police earlier in their careers or who view youth more positively could perceive greater benefit from training with youth and have the opportunity to apply their new knowledge and skills. Training content and format should account for police characteristics to ensure information and skills are applicable to the trainee's daily work, experiences, and their on-the-job needs.

Limitations

Although valuable information was derived from the surveys administered before and after the youth training, some limitations pose difficulties in understanding, generalizing, or applying the results. The three-hour training in which the survey data was collected was a shortened version of the 2-day training, 'Policing the Teen Brain', by SFY. Best practices in police training on youth are likely not reflected in the three-hour training, despite the increased practicality and feasibility offered by a shortened training. Given the promising results, continued areas of need in knowledge and skills, and suggestions for modifications of the three-hour training, a longer training that incorporates feedback from trainees and trainers could provide more comprehensive information and greater opportunities for applying learned concepts that might increase officers' knowledge, skills, and generalization of the training to their daily interactions with youth.

The psychometric properties of the surveys were not available and the survey questions were not directly comparable to surveys used in previous research. As previously mentioned, surveys were unable to be matched by participants from pre- to post-training or within the same training session and trainee demographics were not available. Matching surveys by participants would provide more robust information on individual participant improvement and relationships with other measures. Matching surveys within the same session would provide information on fidelity of trainings and potentially indicate teaching strategies or trainer characteristics that were more associated with more positive changes on surveys. In addition, the survey questions were not exhaustive of the topics or skills covered in the training. Since pre-survey ratings were skewed towards the top 50% of response options (e.g. knowledge and skill scores 3 or higher), using a scale with a greater number of response options might capture smaller changes in knowledge, therefore allowing for better understanding of the impact of the training, compared to the scale used in this survey. The physical space allocated for narrative responses (e.g. 'what are you going to change as a result of this training?') was small, potentially limiting the length of responses that would otherwise provide more detail. Although 29.25% of records were coded by two people (i.e. first author and one graduate student) and good reliability was established, discrepancies could exist in the coding of open-ended questions on pre- and post- survey responses, potentially compromising the reliability of results. As

previously mentioned, one item (the fourth item on the pre- and post- training surveys on adolescents' racial and cultural background) was worded negatively, requiring it be rated opposite of the rating scale for all other questions, potentially negatively impacting the validity of the results for this question.

The number of respondents categorized as 'patrol officers' likely skewed the descriptive and statistical analyses of the results. Of note, many trainers experienced technical difficulties (e.g. unable to play scenario videos) due to the age of the equipment in the training rooms provided by the police units. These difficulties caused some time-management challenges (e.g. unable to spend ample time on the post-training survey) and could have influenced the trainees' perception of the training. However, only 7% of trainees specifically noted 'technical issues' in their suggestions for improvement. Despite these limitations, the administration and analysis of the pre- and post-training surveys remains valuable in understanding the impact and perception of the training on the police force as well as to gain some insight on police officers' general perceptions of young people with whom they may interact in the community.

Conclusion & future directions

In summary, training on youth appears helpful in changing knowledge, beliefs, and skills in officers and appears to match the expectations or desires of officers receiving the training. Specifically, the kinds of skills officers noted they could improve in their interactions with youth included, among other things: slowing their actions (physical and speaking rate), using a calmer tone of voice, giving the youth greater time to respond, and acting with more patience. In addition, this kind of training on adolescent development appears to increase law enforcement's understanding that youth need to be held to a different, age-appropriate standard than adults and that it is important for officers to build relationships with young people in the community. This offers a valuable opportunity to build relationships with youth and and organizations that work with youth.

The results from this study highlight unique opportunities for future investigation and practice as well as policy initiatives. Some training modifications, as suggested by trainees in narrative feedback, would increase the utility of the training and potentially increase the buy-in of police staff. Officers presenting as co-instructors could provide unique insight and real-life experience for trainees. Involving youth in the training, such as sharing their experiences with police, would also provide unique and valuable insight for police staff and may also build empathy and understanding. Providing coaching and on-the-job training (e.g. having instructors participate in ride-alongs) and/or embedding realistic scenarios and role playing into off-site training could support police staff in applying the training to youth interactions and provide powerful information on the impact of training on actual behavior. Although most participants reported they will change some aspect of their behavior or mindset towards youth, investigating the behavior of police staff post-training, in real-time (e.g. on-the-job interactions), could shed better light on the functional change evoked by the training. Continued initial and follow-up professional development would be valuable in improving police interactions with youth. By conducting follow-up training with smaller, specific groups of officers, based on characteristics such as years of experience, current role, or perceptions of youth, material could be tailored to the specific needs of those groups, making it more valuable and impactful.

The pre- and post- training surveys analyzed in the current study provide unique insight into police's opinion on youth, the impact of youth-training on police, and the anticipated changes in police behavior based on the training. Although before training, police largely have negative views on youth, they are interested in improving their knowledge and interaction skills with youth. After training, police demonstrate significant improvement in their self-skill ratings and acknowledge various behavior-related changes they planned to make when interacting with youth as a result of the training.

Police with fewer years of experience or more positive opinions of youth pre-training appear to benefit from the training differently than those with greater years of experience or more negative opinions of youth. The differences based on trainee characteristics indicate opportunities to tailor training to police's past experiences to ensure trainee buy-in and generalization of knowledge and skills to their daily work. Overall, training police on youth behavior and trauma persists as an effective strategy to support positive police-youth interactions in the community.

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Disclosure statement

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Appendix 1. Training Survey Items

Pre-Training

How many years have you worked in law enforcement? *Open-ended short response*

What is your current role? *Options: school resources officer, command staff, patrol officer, community relations officer, other (with open-ended write-in)*

In your experience, what four words best describe youth in your community? *Four spaces for open-ended short response*

What are you hoping to gain from this training? *Open-ended long response*

Please rate how much you agree or disagree with the following statements *(4-Point Likert Scale (strongly disagree, disagree, agree, strongly agree))*:

Adolescents' brains make them perceive and react differently than adult brains.

Adolescents need to be held to different standards than adults are.

It is important for someone in my role to build relationships with youth.

Adolescents' racial and cultural background don't affect the way they respond to police.
I have the skills necessary for interacting effectively with traumatized youth
I feel equipped to help youth regulate their behavior
I feel equipped to prevent youth from overreacting in tense situations
I feel equipped to recognize and work with you who have experienced trauma

Post-Training

How many years have you worked in law enforcement? *Open-ended short response*
    What is your current role? *Options: school resources officer, command staff, patrol officer, community relations officer, other (with open-ended write-in)*
    Overall, what concepts in the training were helpful to you? *Open-ended long response*
    How would you improve this training? *Open-ended long response*
    What are you going to change as a result of this training? *Open-ended long response*
    How useful will this training be for my future interactions with youth? *Options: extremely, very, somewhat, not useful*
    Please rate how much you agree or disagree with the following statements (4-Point Likert Scale (strongly disagree, disagree, agree, strongly agree)):
    Adolescents' brains make them perceive and react differently than adult brains.
    Adolescents need to be held to different standards than adults are.
    It is important for someone in my role to build relationships with youth.
    Adolescents' racial and cultural background don't affect the way they respond to police.
    I have the skills necessary for interacting effectively with traumatized youth
    I feel equipped to help youth regulate their behavior
    I feel equipped to prevent youth from overreacting in tense situations
    I feel equipped to recognize and work with you who have experienced trauma
    The Behavior-Language-Timing idea will help me be more effective in my interactions with youth