From: ▌▌▌▌▌▌▌▌▌
To: sb882
Cc: ▌▌▌▌▌▌▌▌▌
Subject: recommendation
Date: Thursday, July 18, 2024 2:17:00 PM

My name is ▌▌▌▌▌. I am the ▌▌▌▌▌▌▌▌▌▌▌ for the California Council of the Blind (CCB), the largest and oldest organization of Californians with vision loss. CCB is gratified that you will be compiling a report on issues relating to interactions between law enforcement and individuals with intellectual and developmental disabilities, as well as persons with mental health disabilities. In this regard, we want to emphasize that significant numbers of the target population for this report also have vision, hearing, and mobility disabilities. These disabilities, in combination with intellectual and developmental disabilities or mental health disabilities can complicate the issues faced by law enforcement and lead to greater probabilities of negative interactions if not appropriately handled. As an example, a person with a developmental disability who also is blind or has low vision may even be more confused as to exactly what is taking place due to the absence of usable vision. Moreover, it is incumbent upon law enforcement to be aware that this problem may exist and how to handle the issues that it creates. The California Council of the Blind is eager to advise your SB882 council on these issues. You may contact our ▌▌▌▌▌ ▌▌▌▌▌▌▌▌▌▌▌▌▌▌▌, whom I have copied on this email, at ▌▌ -▌▌▌▌▌ to discuss these concerns.

▌▌▌▌▌▌▌▌

California Council of the Blind

DOJ did respond

From: ███████████████████
To: sb882
Cc: ███████████████
Subject: RE: SB 882 listserv/next meeting
Date: Monday, April 22, 2024 9:35:55 AM
Attachments: image004.png
image005.png
image006.png
image007.png
image008.png

EXTERNAL EMAIL: This message was sent from outside DOJ. Please do not click links or open attachments that appear suspicious.

Thanks so much for the quick response, ███████ !

May I ask you also add my colleague, ███████████████ (cc'ed), who leads an incredible organization called Joshua's Gift?

Their "Code Joshua" training program partners with several Bay Area first responders to be able to recognize, respond to, and safely approach individuals on the autism spectrum and other persons with intellectual developmental disabilities.

Supervisor ████████ is proud to support their work in ████████ County and hope to contribute to state policy conversations.

Thank you again for your work, ████████ !

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From: ██████████████████████████████
Sent: Sunday, April 21, 2024 6:30 PM
To: sb882 <sb882@doj.ca.gov>
Cc: ███████████████████████████
Subject: SB 882 listserv/next meeting

EXTERNAL EMAIL: This message was sent from outside DOJ. Please do not click links or open attachments that appear suspicious.

Good evening,

My name is ███████████ , and I am Chief of Staff to ██████ County Supervisor ██████████████ who is also the Chair of the Public Protection Committee.

I am reaching out to inquire about whether there is a listserv for this council that I could be added to.

Thank you for your assistance with engaging on this critical issue and supporting future policy coordination efforts.

In Service,

DOJ did respond

From:	████████████
To:	sb882
Subject:	Advisory Committee appointments
Date:	Tuesday, April 23, 2024 5:46:48 AM

EXTERNAL EMAIL: This message was sent from outside DOJ. Please do not click links or open attachments that appear suspicious.

Hello,

My name is ████████████ and I have been working in the field of developmental disabilities for over 20 years. I have been very involved with law enforcement training and have a California specific CIT Collaborative that looks at less intrusive crisis response when working with someone with developmental disabilities. I not only work in this field but have a sibling with developmental disabilities and co-occurring schizophrenia which has led to a lot of law enforcement interactions. Can you please provide me a link to the application for appointment to the advisory position. I understand that the makeup should include family members and I would meet that category.

Thank you,

████████████

DOJ did respond

From: ████████████████████████
Sent: Tuesday, May 7, 2024 5:21 PM
To: ████████████████████████
Cc: sb882 <sb882@doj.ca.gov>; ████████████████████████
Subject: Re: SB 882 - (2022) - Advisory Council on Improving Interactions between People with Intellectual and Developmental Disabilities and Law Enforcement

EXTERNAL EMAIL: This message was sent from outside DOJ. Please do not click links or open attachments that appear suspicious.

Dear ██████ -

Thank you to CA's DOJ for convening the Advisory Council meeting on April 15, 2024. I am the parent of an adult son diagnosed as a child with autism and part of a family that had to spend six years fighting false criminal charges against him brought by a post-secondary institution and a campus security officer both of which failed in all respects to consider, acknowledge, or address his disability, and instead chose to criminalize it.

We were blessed as our situation was in no way as dire as those individuals whose interactions with police turn deadly. However, our fight to get him a fair hearing, to keep him out of jail and then to clear his name exposed how disability is not only criminalized in California's system of higher education, but also in our state's prosecutorial and judicial systems where he unfortunately ended up after we challenged what were false charges brought against him.

While it does my heart good to see the Advisory Council undertaking this process pursuant to SB882, I am very much aware that law enforcement officers are the tip of the spear in our criminal justice system, which far too often subjects our loved ones to harm at the hands of institutions who are supposed to be protecting the vulnerable and delivering justice but do not do so. I recognize the convening of the Advisory Council is only a first step, but I hope it is a big one that leads to a broader examination of all the issues this population faces in dealing with law enforcement of all types. I appreciate DOJ's comments in this regard which seemed to invite a broader and more comprehensive view of the issues SB882 addresses. I hope that I am not mistaken in that regard.

I would like to pose a few structural points and questions. I also plan to provide public comment, including input on how I believe the Advisory Council should proceed, but I first wanted to raise a few points and also ask a few questions.

First, the choice of council members is excellent. In listening to the day's hearing, including the brief biography each Council member provided along with their input, it became clear each council member brings knowledge, insight and perspective that will not only make a significant contribution to the Council's work, but will, as I think Mr. Frazier said, bring passion and compassion to the task at hand. It was very positive and I enjoyed listening to their experiences and viewpoints, which in some cases unfortunately, but also fortunately, reflected my own lived experience. You are all starting this process with an excellent knowledge base and a group that has advocated to effect change and plans to do so here.

Secondly, I also appreciated DOJ involving a parliamentarian and the extensive information that was provided about Bagley-Keene, etc. It is important that Council members and the public be aware of this information and meeting requirements so that meetings are proper and the work to be done can go forward effectively and in a manner which complies with all rules, regulations, etc.

Third, I appreciate DOJ staff communicating with me in response to my inquiries about when the Advisory Council would meet and then following up regarding timing, logistics and accessing it online. ██████, I especially appreciated your effort in sharing the information you did. In my experience in advocating for my son, my inquiries have not always been met with such openness, transparency and plain old courtesy and I have to say I appreciate it very much.

A few questions. First, is it possible to access the same package of materials the Council members had at the meeting? I know there were materials on the website, but during the meeting members seem to refer to items I couldn't find posted there and I wasn't always sure what they were referring to. It occurred to me they may have received a more comprehensive package of meeting materials. I wondered if those were available? Maybe I am mistaken, but if there are such materials, can this also be posted on the website?

Secondly, will a recording of the meetings be posted on SB882's website? This would be a good way to enable access and allow clarification and understanding. I know sometimes people can't attend meetings day of, even remotely. Having it available online will help people like me who take notes but sometimes miss what was said, including because people seem to speak faster these days. (The rewind button is one of life's greatest inventions!) I know the Committee on Revision of the Penal Code follows this practice. http://www.clrc.ca.gov/CRPC/Meetings/Video.html. I hope this can be done with the SB882 Advisory Council meetings.

I didn't provide public comment at the meeting as I thought I would see what the plan was, including the tone and tenor of the proceedings. I was impressed with the positive thrust of the meeting, and it is obvious the Council understands the issues and is ready to take on the challenges they present, so that the process is in good hands. However, I also appreciated DOJ's repeated invitations to listeners to provide subsequent public comment, including input to the council's process moving forward. I am in the process of developing my comment, including thoughts and suggestions on the depth and breadth of what the Council can and should address and will provide that later, but I wanted to write and say thanks for what has happened so far with this Council.

Along the lines of next steps, I regularly receive research articles, in part because of our family's experience. I have received studies about issues related to the disability community and its interactions with police and one recent study relates to the very issue the SB882 Advisory Council is addressing. It is entitled, "Law enforcement officers' interactions with autistic individuals: Commonly reported incidents and use of force," and was issued in 2022. It is here:

https://www.academia.edu/93263213/Law_enforcement_officers_interactions_with_autistic_individuals_Commonly_reported_incidents_and_use_of_force?

email_work_card=title (It can be downloaded for free as a pdf). I wrote to Dr. Gardner, the principal author of the study, last week with a question and it turns out she was in California providing a training to the San Mateo Sheriff's Office. It occurred to me that she may be a great resource as a trainer, researcher, and a clinician working with the autism community. She wrote back and indicated she would provide me with some more relevant papers, and I can send those to you if you like.

Finally, I was wondering if you had any idea of when the next meeting would be or how often the Council would meet. I won't hold you to it, as I know you are probably trying to sync up everyone's schedule, I just thought if you knew, it would help me with my calendaring and planning.

Again, thanks for your help in accessing this process. It is very important, and I am very happy it is finally underway.

Best regards,

████████████████

DOJ did respond

From: ▮▮▮▮▮
To: ▮▮▮▮▮
Cc: SB882 ▮▮▮▮▮
Subject: Re: SB 882 - (2022) - Advisory Council on Improving Interactions between People with Intellectual and Developmental Disabilities and Law Enforcement
Date: Wednesday, May 15, 2024 2:01:20 PM
Attachments: relawenforcementofficersinteractionswithautisticin (1).zip
Law Enforcement Officers _ A Call for Training and Awareness of Disabilities.pdf
LEO scoping review.pdf
Gardner_et_al-2018-Journal_of_Autism_and_Developmental_Disorders.pdf
Gardner et al 2022 LEO.pdf
Gardner Campbell 2020 JADD.pdf
railey-et-al-2020-a-systematic-review-of-law-enforcement-training-related-to-autism-spectrum-disorder.pdf

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> **EXTERNAL EMAIL:** This message was sent from outside DOJ. Please do not click links or open attachments that appear suspicious.

Dear ▮▮▮▮▮ - Per my earlier email I am sending along additional research Dr. Gardner shared with me, which includes both her own research as well as related studies done by colleagues of hers.

Please let me know if you have any questions or if anything didn't come through.

Thank you,

▮▮▮▮▮

On Wed, May 8, 2024 at 4:20 PM ▮▮▮▮▮ wrote:

Dear ▮▮▮▮ – Thank you for your kind reply. Much appreciated! Thanks too for the information provided, including the handouts. I will review them with my notes, including when the recording is posted (thanks for that too!) and I can rewind at will!

I will send along the additional research Dr. Gardner provided in the next day or so after I've downloaded it. I will "reply all" in case you are out of the office so ▮▮ and ▮▮ will see it.

Finally, please feel free to include my email as a public comment, although as indicated I will be providing more. I have the tentative July 25th date on my calendar so I'm set in that regard and thanks for adding me to the listserve!

Again, thanks for all your help!

Best regards,

▮▮▮▮

Law Enforcement Officers' Preparation for Calls Involving Autism: Prior Experiences and Response to Training

Lauren Gardner & Jonathan M. Campbell

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ORIGINAL PAPER

Law Enforcement Officers' Preparation for Calls Involving Autism: Prior Experiences and Response to Training

Lauren Gardner[1] · Jonathan M. Campbell[2]

Abstract

Highly publicized interactions between law enforcement officers (LEOs) and individuals with autism spectrum disorder (ASD) have raised questions about LEOs' training related to ASD. In the present study, 157 LEOs participated in ASD-specific training and completed pretest and posttest surveys of autism knowledge, confidence, and self-monitoring. The majority of LEOs responded to calls involving someone with ASD in the last year, with 20% of these calls resulting in involuntary psychiatric hospitalization. LEO knowledge of ASD, self-confidence in responding to calls, and self-monitoring of performance increased from pretest to posttest. Compared to male counterparts, female officers were less likely to use force and handcuffs when responding to ASD-related calls. Female officers' self-confidence increased significantly more than male officers.

Keywords Autism spectrum disorder · Law enforcement · Training · Knowledge

Coverage of problematic interactions between law enforcement officers (LEOs) and individuals with autism spectrum disorder (ASD) in the media has resulted in increased attention to LEOs' need for ASD-specific training. There have been a number of highly publicized encounters between individuals with ASD and LEOs that have resulted in injury to caregivers or the death of an individual with ASD. Given that ASD affects an estimated 1 in 59 individuals in the US (Baio et al. 2018), it is likely that LEOs interact with individuals with ASD on a fairly regular basis. Lack of training may result in LEOs misinterpreting ASD specific behavior as noncompliant, threatening, disorderly, or suspicious.

Copenhaver and Tewksbury (2019) completed an analysis of media reports involving LEOs and ASD to determine the types of interactions LEOs most commonly have with individuals with autism. Analyses yielded several themes including incidents involving autistic persons being questioned or treated as suspects, incidents where individuals with ASD were the victim of crime, wandering/missing persons with ASD, and positive stories of interactions between LEOs and individuals with ASD. Highly publicized instances of law enforcement use of excessive force, many captured on video or audio, have prompted reforms to training in ASD for LEOs. For instance, the Florida senate passed a bill that required the Florida Department of Law Enforcement to establish training for LEOs specific to ASD.

When considering gender and the use of police force, research suggests female officers are less likely than male officers to exert extreme force which includes threats, physical restraint, search, and arrest (Garner et al. 2002; Rabe-Hemp 2008; Schuck and Rabe-Hemp 2007). However, male officers have been found to be more likely than female officers to demonstrate supportive behaviors which include providing comfort, information, and assistance to citizens (Rabe-Hemp 2008). Although previous research supports that gender may influence police behavior, it is very likely that police behavior may vary according to situational and departmental factors. We are not aware of literature examining relationships between gender and police behavior when responding to a call that involves an individual with ASD.

Previous research documents that persons with developmental delays, including those with ASD, are at increased risk for abuse and victimization (Petersilia 2001). In other instances, interactions between LEOs and individuals with

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Ⓓ Springer

ASD may be as a result of co-occurring psychiatric or medical concerns (Tint et al. 2017). LEOs may also be called upon in cases involving elopement, sensory over-stimulation, and behavioral difficulties such as aggression and self-injury. As a result of previous incidents where LEOs were ill-prepared to respond to calls involving individuals with ASD, several U.S. states including Florida, New Jersey, and Pennsylvania now require LEOs to receive training in ASD.

As LEOs are the first contact between individuals and the penal system, instruction for LEOs specific to ASD is warranted. Such training provides LEOs with awareness of the behavioral symptoms and social impairments that may make an individual with ASD more vulnerable to be considered a suspect. For example, if an individual with ASD does not respond to police when spoken to, avoids eye contact upon questioning, does not remain still, or tries to flee the scene these behaviors may be misinterpreted as a sign of guilt as opposed to characteristics of ASD. Although it has been suggested in the UK that officers ask the question 'Do you have any difficulties that I may not be aware of?' during initial contact with a person they suspect may have autism (Chown 2009), individuals with ASD may not self-disclose their diagnosis to LEOs due to fear of discrimination (Crane et al. 2016) or due to communication/language delays and deficits associated with their ASD diagnosis. Murrie et al. (2002) noted that failure to correctly identify individuals who are on the autism spectrum, or overlooking the behavioral features characteristic of an ASD diagnosis, may lead to inappropriate forensic assessment of criminal responsibility, legal decisions, or clinical interventions.

Research regarding LEO knowledge of ASD and disability awareness is sparse. Modell and Mak (2008) found that 80% of officers were unable to accurately identify characteristics of ASD, had difficulty distinguishing between disabilities, and perceived themselves as competent in ASD when they may not have been. In a study of UK officers' awareness and understanding of autism, Chown (2009) found that 62% of officers had received no formal training in ASD, and only about half recognized key features of autism. Although officers in the Chown study rated their competency in ASD lower than officers in the Modell and Mak study, findings suggest officers' self-assessments may overestimate competence. Research findings support that the majority of LEOs receive very little or no training in disabilities and ASD (Chown 2009; Eadens et al. 2016). As such, it is not surprising that LEOs demonstrate limited knowledge of the behavioral characteristics of ASD and how to appropriately respond to incidents involving individuals with ASD.

Several studies have been conducted examining LEO training requirements and inclusion of training specific to ASD. Laan et al. (2013) conducted interviews with LEO training coordinators in seven states, and compared LEO training materials related to recommendations for training on ASD and guidelines for training on other mental health disorders. Results indicated that most officers received between 400 and 770 h of total training at the basic recruit level, of which only 3 to 12 h were focused on mental health disorders. It should be noted that including ASD within the content of training programs focused on mental health disorders is problematic as autism is not a mental health disorder. Although individuals with autism may present with co-occurring mental health diagnoses, providing training that presents ASD as a mental health disorder to officers may result in confusion, and impair LEOs' ability to accurately distinguish autism from other mental health disorders (Hepworth 2017).

The Crisis Intervention Team (CIT) model is a well-established training model created to better prepare LEOs to respond effectively to mental health crises. CIT programs exist throughout the United States to promote safe and humane responses from law enforcement to those experiencing a mental health crisis. CIT training is a community partnership of law enforcement, mental health and addiction professionals, and individuals who have mental health or addictions disorders, their families and others. This program is considered a "best practice" and is provided to officers who volunteer to participate in the training (Watson and Fulambarker 2012). The CIT program provides 40 h of comprehensive training to patrol officers emphasizing mental-health related topics, crisis resolution skills, de-escalation training, and access to community-based services. The didactics/lectures provided in the 40-h training include 15 different areas of specialized knowledge, one of which is developmental disabilities. It is the goal of the CIT program that trained officers are able to interact with crisis situations using de-escalation techniques that improve the safety of the officer, consumer, and family members.

Although CIT training provides LEOs comprehensive training in mental health concerns, a standardized curriculum for autism training has yet to be implemented. In a study of LEOs reporting on their experiences and training related to ASD, Gardner et al. (2019) found that although over half of LEOs reported having responded to a call involving an individual with ASD within the last year, over 70% of officers reported they had received no formal training in ASD. Although LEOs who had previously received autism-specific training reported feeling better prepared to respond to incidents involving individuals with ASD, involuntary institutionalization for mental health examination was the reported outcome of 25% of received calls. Although some states have now mandated ASD training for LEOs, little is known regarding the content of these trainings and the impact of these trainings on practice.

A study of LEOs' perceptions of the most positive aspects of ASD-specific training included increased general knowledge of ASD, minimizing distress of individuals with ASD

when responding to a call, practical application and usefulness for their LEO role, and modifying interview techniques (Crane et al. 2016). The top three aspects of training that LEOs deemed not satisfactory included training that lacked focus on ASD in the criminal justice context, overly simplistic content, and lack of practical application and relevance for LEOs (Crane et al. 2016). Chown (2009) found that LEOs suggested training should be incorporated into existing training programs, utilize a variety of delivery approaches, include a variety of disabilities, incorporate advice on tactics to use, provide opportunities to interact with persons with ASD, and provide specific questions officers can ask to someone to determine if they have a hidden disability.

In considering the ideal format for increasing LEO awareness of ASD, in-person training is considered superior to online training modules. Teagardin et al. (2012) provided ASD-related training to police officers via video. Officers who participated in the training outperformed officers who did not receive training on a measure of ASD-related knowledge; however, neither group demonstrated mastery of training material. The authors concluded that video training is likely insufficient to train officers on how to assess and respond to individuals with ASD. Instead of video or online training, in-vivo training provided by individuals who have expertise in ASD and law enforcement is ideal as it increases the validity of the ASD training. It is recommended that the in-vivo training includes opportunities for role-playing and hands-on activities to supplement training. As a vulnerable population within our society, a growing awareness of ASD by LEOs is warranted; however, LEOs' experiences and knowledge specific to ASD remains an under-researched area.

Context and Purpose of the Study

The Florida senate passed a bill which took effect October 1, 2017 requiring the Florida Department of Law Enforcement to establish a continued employment training component for LEOs specific to ASD. The training is required to include recognition of symptoms and characteristics of ASD and appropriate responses to a person exhibiting such symptoms. In response to the senate bill, the first author and colleagues created a bi-monthly training program for LEOs that prepares officers to recognize signs and symptoms of ASD and adapt their responses in crisis situations to meet the needs of autistic individuals. The training includes a pre- and post-survey to document LEOs' knowledge of ASD, confidence in responding to a call, and confidence in self-monitoring response to a call. The purposes of the present study are (a) describe LEOs training and experiences regarding ASD-related calls, (b) describe LEOs knowledge

of ASD, self-confidence, and self-monitoring of their performance, (c) evaluate relationships between prior training and outcomes from calls, and (d) to determine if there were changes in LEOs' knowledge of ASD, confidence, and self-monitoring following an ASD-specific training. Given the findings regarding gender differences in LEO policing practice (e.g., use of force), we were also interested in examining the role of LEO gender in prior training, responding to calls, and as a moderator of the impact of the training.

Methods

Participants

One-hundred and fifty-seven LEOs from police and sheriff departments in a large metropolitan area of the state of Florida attended four separate training sessions. LEOs were 66.2% male with a mean age of 39.99 years ($SD = 10.1$) and 12.58 years of law enforcement experience ($SD = 8.9$; see Table 1 for additional information about participants). Study procedures were approved by the first author's Institutional Review Board.

Measures

Experiences with Autism

Participants completed Gardner et al.'s (2019) demographic questionnaire that included questions about professional experience, prior autism training, and autism-related calls over the prior 12 months.

Knowledge of Autism (KOA)

LEOs completed a 16-item measure of autism knowledge prior to and after the training. Participants read statements about autism (e.g., "Individuals with autism may avoid eye contact") and endorsed each statement as "True" or "False." Correct responses were summed to produce a total knowledge score; internal consistency reliability (α) = 0.76 at pretest and 0.91 at posttest.

Confidence in Responding (CIR)

LEOs completed a six-item measure of confidence in response to a call involving an individual with autism (e.g., "Circle the number that best describes your degree of confidence in your ability to:…Effectively communicate with individuals with autism"). Participants endorsed agreement with each statement using a 5-point Likert scale ("Strongly disagree" to "Strongly agree"). Responses were summed to

Table 1 Participant characteristics and experiences with autism spectrum disorder (N = 157)

Variable	*n*	%	Min	Max	M	SD
Gender						
Male	104	66.2				
Female	51	32.5				
Missing	2	1.3				
Do you have a relationship with someone with autism? If "Yes," what is relationship?						
No	50	31.9				
Friend	34	21.7				
Other	30	19.1				
Extended family	20	12.7				
Immediate family	18	11.5				
Missing	5	3.2				
Have you participated in training for interacting with individuals with autism?						
Yes	59	37.6				
No	97	61.8				
Missing	1	0.6				
Have you completed crisis intervention training?						
Yes	93	59.2				
No	61	38.9				
Missing	3	1.9				
Number of years of law enforcement experience			0.00	44.00	12.58	8.9
Age (year)			21.00	69.00	39.99	10.1

produce a total confidence score; internal consistency reliability (α) = 0.89 at pretest and 0.93 at posttest.

Self-Monitoring of Response (SMR)

LEOs completed a five-item measure of confidence in ability to self-monitor their response to a call involving an individual with autism (e.g., "Evaluate the success of [my] overall performance"). Participants endorsed agreement with each statement using a 5-point Likert scale ("Strongly disagree" to "Strongly agree"). Responses were summed to produce a total score; internal consistency reliability (α) = 0.88 at pretest and 0.93 at posttest.

Procedures

LEOs who attended the training were invited to complete pre- and post-questionnaires. The training day begins with a 4-h didactic presentation on ASD, which includes in-depth information on how to recognize behaviors that are consistent with an ASD diagnosis. LEOs are instructed how to adapt their behavior in crisis situations to facilitate successful resolutions to calls involving individuals with ASD. Special emphasis is placed on commonly reported incidents including calls related to wandering/elopement, behavioral difficulties (e.g., aggression directed toward self and others), victimization, suspected abuse/neglect, and suspected criminal activity. LEOs are also provided with tools they can use to effectively communicate with individuals with ASD, as well as resources that are available to families and individuals on the spectrum that may be of assistance.

A portion of the participants elected to participate in an additional 4-h afternoon training in the hospital's simulation center (SIM). The SIM training included applied practical learning through simulation scenarios. LEOs rotated through three different scenarios where professionally trained actors, some of whom are autistic, acted out incidents that require a response from law enforcement. The SIM training allowed LEOs to practice the skills they were taught in the first 4 h of training through role-play scenarios. Live feedback, coaching, and debriefing occurred, allowing for individualized training in appropriate de-escalation techniques that can be helpful when interacting with autistic persons experiencing a crisis. For the LEOs who completed the SIM training, the post-test questionnaire was completed after the SIM training. A total of 29 LEOs (18.5% of the sample) completed the additional SIM training, however, authors did not identify SIM participants separately from the larger training group until the final training session (*n* = 9; 5.7% of the sample).

Results

Consistent with Gardner et al. (2019), most LEOs reported some type of prior relationship with an individual with ASD ($n = 102$; 65.0%, see Table 1) and roughly 60% ($n = 96$) reported responding to one or more calls involving an individual with ASD in the past 12 months (see Table 2). LEOs were asked to report details about the most recent call involving an individual with ASD within the last year and the most significant call within the last year. In some cases, these were the same call. Analyses were based on the most recent call reported. About 40% of the sample had completed training related to interacting with individuals with ASD and about 60% of the sample had completed CIT. Male and female officers were equally likely to report prior ASD training, χ^2 (1, $N = 154) = 2.19$, $p = 0.14$; however, more male (71.8%) than female (38.8%) officers reported prior CIT training.

Relationships Between Prior Training and Responses to Calls

For LEOs responding to calls involving individuals with ASD ($n = 96$), those with ASD-specific training were no more likely to report feeling prepared to respond to the call, χ^2 (1, $N = 95) = 0.30$, $p = 0.59$. Likewise, LEOs completing CIT were no more likely to report feeling prepared to respond, χ^2 (1, $N = 94) = 0.01$, $p = 0.91$ Compared to LEOs without ASD-specific training, those with prior training were equally likely to: (a) use physical force during the call, χ^2 (1, $N = 95) = 0.82$, $p = 0.78$, (b) use handcuffs, χ^2 (1, $N = 94) = 2.13$, $p = 0.15$, and (c) have the call result in involuntary hospitalization, χ^2 (1, $N = 94) = 0.22$, $p = 0.64$. Compared to LEOs without CIT, those with CIT were *more* likely to use physical force, χ^2 (1, $N = 94) = 4.36$, $p = 0.04$, but equally likely to use handcuffs, χ^2 (1, $N = 93) = 0.90$, $p = 0.34$, and have the call result in involuntary hospitalization, χ^2 (1, $N = 93) = 0.89$, $p = 0.35$.

Officer Gender and Response to Calls

For LEOs responding to calls, males were more likely to use force (19.1%) than females (3.2%), χ^2 (1, $N = 94) = 4.36$,

Table 2 Characteristics of police calls involving individuals with autism spectrum disorder (N = 157)

Variable	n	%	Min	Max	M	SD
How many calls have you had that involved someone with autism over the past 12 months?						
None	53	33.8				
One	21	13.4				
Two	13	8.3				
Three or more	62	39.5				
Missing	8	5.1				
For respondents reporting calls within the past 12 months ($n = 96$)						
Number of calls over the past 12 months			1.00	50.00	6.45	7.6
Approximate age of individual with autism			5.00	50.00	15.33	7.1
Was the individual able to use words to effectively communicate with you?						
Yes	61	63.5				
No	35	36.5				
Did you use physical force to subdue the person with autism?						
Yes	13	13.5				
No	83	86.5				
Was the person placed in handcuffs?						
Yes	10	10.5				
No	83	86.5				
Did the situation result in an involuntary hospitalization of the person?						
Yes	21	22.1				
No	74	77.9				
Did you feel that you were well trained or adequately prepared for this call?						
Yes	67	69.8				
No	29	30.2				

$p = 0.037$. Likewise, male officers more often used handcuffs (16.1%) when compared to female officers (0.0%), χ^2 (1, $N = 93$) = 5.60, $p = 0.018$. There was no relationship between officer gender and likelihood of involuntary hospitalization, χ^2 (1, $N = 93$) = 0.89, $p = 0.347$.

Relationships Between Prior Training and Knowledge, Confidence, and Self-Monitoring

Prior to the training, KOA scores did not differ, t (154) = 0.23, $p = 0.82$, for individuals with ($n = 59$; $M = 11.93$, $SD = 2.9$) or without ($n = 97$; $M = 11.82$, $SD = 2.8$) ASD-specific training. Likewise, confidence in using self-monitoring strategies did not differ between groups, t (148) = -0.43, $p = 0.67$. Self-confidence in responding to ASD-related calls was greater, t (148) = 2.86, $p = 0.005$, for individuals with ($n = 57$; $M = 16.72$, $SD = 3.6$) versus without ($n = 93$; $M = 14.68$, $SD = 4.6$) ASD-specific training.

Prior to the training, KOA scores did not differ, t (152) = 0.31, $p = 0.76$, for individuals with ($n = 93$; $M = 11.91$, $SD = 2.6$) or without ($n = 61$; $M = 11.77$, $SD = 3.3$) CIT training. Likewise, confidence in using self-monitoring strategies did not differ between groups, t (146) = −0.27, $p = 0.79$. Self-confidence in responding to ASD-related calls was greater, t (152) = 0.31, $p = 0.76$, for individuals with ($n = 90$; $M = 16.20$, $SD = 3.9$) versus without ($n = 58$; $M = 14.44$, $SD = 4.8$) CIT training. Comparisons between male and female officers revealed no differences in ASD knowledge, t (153) = 0.56, $p = 0.57$, confidence in responding to a call, t (147) = 1.88, $p = 0.062$, or confidence in self-monitoring ability, t (147) = 1.01, $p = 0.316$.

Relationships Between Knowledge, Confidence, and Preparedness with Responses to Calls

For the subgroup of participants who had responded to ASD-related calls, we examined relationships between pretest knowledge, confidence, and preparedness with three outcomes of ASD calls: (a) use of physical force, (b) use of handcuffs, and (c) the call resulting in involuntary hospitalization. No significant relationships emerged between ASD knowledge and use of physical force, r (92) = 0.00, $p = 0.98$; handcuffs, r (92) = 0.15, $p = 0.15$; or involuntary hospitalization, r (92) = 0.09, $p = 0.41$. No significant relationships emerged between confidence and use of physical force, r (91) = 0.08, $p = 0.47$; handcuffs, r (91) = −0.04, $p = 0.71$; or involuntary hospitalization, r (91) = 0.14, $p = 0.18$. Likewise, no significant relationships emerged between preparedness (i.e., feeling prepared or not) and use of physical force, χ^2 (1, $N = 96$) = 1.81, $p = 0.18$; or use of handcuffs, χ^2 (1, $N = 95$) = 0.58, $p = 0.45$. A marginally significant relationship existed between preparedness and involuntary hospitalization, χ^2 (1, $N = 95$) = 3.71, $p = 0.05$. For officers reporting feeling prepared for calls

($n = 66$), involuntary hospitalization evaluations occurred at a rate of 16.67% versus 34.48% of officers who reported not feeling prepared ($n = 29$).

Given that preparedness was marginally related to reduced likelihood of involuntary hospitalization, we conducted exploratory analyses to examine potential relationships between several variables. Using listwise deletion, officers' reports of feeling prepared were not related to *age*, r (90) = 0.11, $p = 0.28$; *years of experience*, r (90) = 0.00, $p = 0.95$; *number of ASD calls*, r (90) = −0.13, $p = 0.23$; *ASD knowledge*, r (90) = 0.09, $p = 0.39$ or having a relationship with someone with ASD, r (90) = − 0.17, $p = 0.11$. Officer gender was also unrelated to preparedness for calls, χ^2 (1, $N = 94$) = 0.46, $p = 0.49$.

Changes in Knowledge, Confidence, and Self-Monitoring

For KOA, CIR, and SMR scores, three, 2 (Time) × 2 (ASD Training status) × 2 (CIT Training status) mixed design ANOVAs resulted in significant main effects of Time. *Knowledge* scores improved, $F(1, 122) = 100.37$, $p < 0.001$, from pretest ($M = 12.28$, $SD = 1.9$) to posttest ($M = 14.16$, $SD = 1.3$). *Confidence in responding* scores improved, $F(1, 122) = 64.15$, $p < 0.001$, from pretest ($M = 15.56$, $SD = 4.0$) to posttest ($M = 18.90$, $SD = 3.1$). *Confidence in self-monitoring* scores improved, $F(1, 122) = 21.13$, $p < 0.001$, from pretest ($M = 15.06$, $SD = 2.8$) to posttest ($M = 16.35$, $SD = 2.7$). No other main effects or interactions were significant. We analyzed data excluding known LEOs who completed SIM (i.e., 9 officers, 5.7% of the sample) and results did not differ.

Exploring Officer Gender as Moderator of Training Outcomes

ASD knowledge changed equally across male ($M_{Change} = 2.03$) and female officers ($M_{Change} = 1.64$), Time x Gender, $F(1, 116) = 1.262$, $p = 0.263$. Female *confidence in responding* ($M_{Change} = 5.05$) improved significantly more than males ($M_{Change} = 2.61$), Time x Gender, $F(1, 116) = 10.658$, $p = 0.001$. For confidence in responding, no other interactions were significant involving officer gender. Female *confidence in self-monitoring* ($M_{Change} = 2.45$) improved significantly more than males ($M_{Change} = 0.85$), Time × Gender, $F(1, 116) = 7.919$, $p = 0.006$. For confidence in self-monitoring, no other interactions were significant involving officer gender.

Discussion

Review of Main Findings

Roughly 65% of LEOs reported having a relationship with an individual with ASD, such as an immediate or extended

family member or friend/acquaintance. The majority of LEOs reported they had no prior training specific to ASD, although more than half reported previous training focused on mental health concerns (i.e., CIT training). Within the previous year, roughly 60% of LEOs reported responding to a call involving an individual with ASD, with 40% of LEOs reporting responding to three or more calls that involved an individual with ASD within the last year. For LEOs responding to calls, those who had prior training (ASD-specific or CIT) did not report feeling more adequately prepared to respond to the call. Likewise, there was no relationship between prior ASD-specific training and the use of force, handcuffs, or the call resulting in evaluation for involuntary hospitalization. Interestingly, LEOs who had completed CIT training were more likely to use physical force in response to an ASD-related call. It may be the case that LEOs with CIT training were called to respond to individuals with ASD presenting with more significant behavioral concerns or co-occurring mental health disorders due to their prior training.

Our findings correspond with prior work documenting LEOs' simultaneous reports of feeling prepared to respond to calls yet desiring further training (Gardner et al. 2019; Modell and Mak 2008). Self-reported preparedness and pre-training knowledge of ASD did not differ whether or not LEOs had completed prior ASD-specific training or CIT. However, self-reported confidence in ability to respond to calls involving ASD was significantly higher for LEOs who had completed ASD-specific or CIT trainings. Self-reported confidence did not translate into different outcomes for calls, however, as use of force, handcuffs, and involuntary hospitalization rates were similar regardless of self confidence.

Roughly 70% of officers reported feeling prepared for ASD-related calls and self-reported preparedness was related to a lower likelihood of involuntary hospitalization. The route to preparation for the call was not through ASD or CIT trainings, however, as rates of preparedness did not differ between trained and untrained groups. In our exploratory analysis, self-reported preparation was also not related to age, experience, number of ASD calls, knowledge of ASD, or having a personal relationship with an autistic individual.

When assessing differences pre- and post-training, LEOs who participated in the training program demonstrated significant improvements in assessed knowledge of ASD, as well as significant improvements in self-confidence in responding, and self-monitoring. Increased knowledge, self-confidence, and self-monitoring was equivalent regardless of whether officers had completed prior ASD-specific training or CIT training.

Our exploratory analyses involving officer gender resulted in interesting findings in terms of prior training, use of force during calls, and response to training. When compared to males, female officers completed CIT training less frequently. During calls, however, female officers used force and handcuffs less frequently than male officers. Differences in the use of force is consistent with the larger policing literature that documents reduced use of excessive force by female officers. Leong (2018) suggests that female officers' reduced reliance on force may be due to superior communication skills to navigate and defuse conflict. It may also be the case that female officers are perceived differently during ASD-related calls and are viewed, perhaps stereotypically, as calming as opposed to threatening (Leong 2018). Increases in ASD-related knowledge over training were consistent across genders; however, female officers endorsed greater improvements in self-confidence in responding to ASD-related calls and monitoring their performance during such calls.

Implications

Findings from the current study indicate that the majority of LEOs have not received training specific to autism, although more than half have responded to calls on duty involving individuals with autism within the last year. Of those who responded to calls, LEOs who had previously received autism specific training reported feeling more confident in responding to the call. Consistent with Gardner et al. (2019) findings, over 20% of LEOs reported the outcome of the call involved the individual with ASD being taken to a receiving facility for involuntary psychiatric examination. LEOs who reported feeling well-prepared for calls involving autism were less likely to initiate involuntary psychiatric hospitalization for individuals with ASD. Additional research is needed to determine if involuntary hospitalization is the result of deficits in adequate training for LEOs related to ASD, or if this outcome diverts individuals from the criminal justice system when appropriate.

Given the increase in reported prevalence of ASD, LEOs are likely to interact with individuals with ASD within their professional role. Some states are now requiring autism specific training for first responders to assure LEOs are better prepared to recognize the signs and symptoms of autism, and respond appropriately. The realities of LEO training requirements result in practical challenges regarding how and when officers should participate in ASD-related training. For example, ASD and disability training might be delivered and well-received through integration into standard LEO training at the academy. The results of the present study suggest that formalized training in ASD has potential value for LEOs. ASD knowledge, self-confidence in responding to calls, and confidence in self-monitoring performance improved before and after training. The subsequent impact of increases in LEOs' knowledge and self-confidence is not established and it is not clear if these increases translate into improved overall response to individuals with ASD.

Differences in outcomes across LEO gender suggests that involvement of female officers during ASD-related calls may result in less force being utilized; however, officers' use of force during calls involves a host of variables, such as behavior exhibited by the individual with ASD, race/ethnicity of the individual with ASD, and presence of other individuals. Even so, our findings replicate prior work (e.g., Rabe-Hemp 2008; Schuck and Rabe-Hemp 2007) that suggests there is a robust effect of female gender on reduction of excessive force during policing. A tentative implication of the findings is to involve a female officer in response to a call involving an individual with ASD.

Limitations

Our design does not allow for causal inference regarding the impact of the training as there was no control group utilized in our design. As a result, we conclude that LEOs demonstrated increases in knowledge, self-confidence, and self-monitoring but cannot unequivocally conclude that this was due to the training. Our methodology also exclusively utilized self-report measures as opposed various sources of information, such as direct observation or retrospective access to outcomes of calls. As such, the veracity of report is unknown and subject to LEO recall which may over- or under-estimate percentages of calls resulting in use of force, handcuffs, and involuntary hospitalization procedures. Finally, our design does not establish linkages between training and actual LEO responses to calls; therefore, the impact of training is not fully known. In particular, it is unknown if increases in knowledge and self-confidence predict changes in LEO behavior during calls. Investigators also failed to track LEO outcomes according to participation in the SIM training during the first group of SIM trainings; therefore, understanding the potential impact of the SIM training beyond the traditional training cannot be determined. Future data collection will continue tracking LEOs who complete the traditional and SIM trainings.

Directions for Future Research

A short-term recommendation is to improve methodology utilized in our current investigation by including a control group of LEOs who do not receive training. Likewise, improved access to outcomes of calls is recommended (e.g., use of handcuffs), particularly tracking changes in outcomes as a result of training. Additional research is also needed to determine the ideal format and content for training to increase LEOs' knowledge of ASD and prepare them for contact they may have with individuals with ASD during their duties as an officer. Further research is needed to determine the most pertinent and appropriate content to provide LEOs about ASD. Previous research suggests trainings should include information regarding the core features of autism, as well as practical knowledge and specific tactics for interacting with autistic persons. More information is needed regarding the types of calls LEOs receive in the line of duty that include individuals with ASD (e.g., missing person, victims of abuse, battery/assault) to assure that training programs provide information that is most applicable for LEOs.

Results of previous research supports there is a need for LEOs to receive formalized training in ASD (Gardner et al. 2019; Modell and Mak 2008; Teagardin et al. 2012). Outcomes of such trainings result in LEOs reporting they feel better equipped to respond to calls involving individuals with ASD (Gardner et al. 2019). However, further research is needed to determine the real-world impact of ASD-specific training on improving LEOs ability to safely intervene (e.g., reduced use of force, arrest, involuntary psychiatric hospitalization), especially given previous findings that LEOs tend to perceive themselves as competent in ASD when they may not be (Modell and Mak 2008; Chown 2009). As suggested by our findings, knowledge and self-confidence may not be appropriate mechanisms to impact LEO responses to calls; however, relationships between these variables have not been tested formally, to our knowledge.

Exploratory analyses suggest that officer gender serves as a significant moderator during responses to ASD-related calls as well as response to training. Future work should continue examining the role of officer gender as well as potential interactions between officer gender and other contextual variables, such as gender of individual with ASD and behavior exhibited by the individual with ASD, which may be captured by the nature of the call (e.g., aggression, elopement). It may be possible that outcomes differ, in general, for males and females with ASD and the nature of the call, but also that officer-ASD gender interactions contribute to different outcomes.

Compliance with Ethical Standards

Research Involving Human Participants and/or Animals All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

References

Baio, J., Wiggins, L., Christensen, D. L., Maenner, M. J., Daniels, J., Warren, Z., et al. (2018). Prevalence of autism spectrum disorder among children aged 8 years—autism and developmental disabilities monitoring network, 11 sites, United States, 2014. *MMWR Surveillance Summaries, 67*(SS-6), 1–23. https://doi.org/10.15585/mmwr.ss6706a1.

Chown, N. (2009). 'Do you have any difficulties that I may not be aware of?' A study of autism awareness and understanding in the UK police service. *International Journal of Police Science & Management, 12*, 256–273. https://doi.org/10.1350/ijps.2010.12.2.174.

Copenhaver, A., & Tewksbury, R. (2019). Interactions between autistic individuals and law enforcement: A mixed-methods exploratory study. *American Journal of Criminal Justice, 44*, 309–333.

Crane, L., Maras, K. L., Hawken, T., Mulcahy, S., & Memon, A. (2016). Experiences of autism spectrum disorder and policing in England and Wales: Surveying police and the autism community. *Journal of Autism and Developmental Disorders, 46*(6), 2028–2041.

Eadens, D. M., Cranston-Gingras, A., Dupoux, E., & Eadens, D. W. (2016). Police officer perspectives on intellectual disability. *Policing An International Journal of Police Strategies & Management, 39*, 222–235.

Gardner, L., Campbell, J. M., & Westdal, J. (2019). Brief Report: Descriptive analysis of law enforcement officers' experiences with and knowledge of autism. *Journal of Autism and Developmental Disorders, 49*(3), 1278–1283.

Garner, J. H., Maxwell, C. D., & Heraux, C. G. (2002). Characteristics associated with the prevalence and severity of force used by the police. *Justice Quarterly, 19*(4), 705–746.

Hepworth, D. (2017). A critical review of current police training and policy for autism spectrum disorder. *Journal of Intellectual Disabilities and Offending Behaviour, 8*(4), 212–222.

Laan, J. M., Ingram, R. V., & Glidden, M. D. (2013). Law enforcement training on mental disorder and autism spectrum disorders in the southeastern United States. *Journal of Global Intelligence & Policy, 6*(10), 51–67.

Leong, N. (2018). In a different force. *The George Washington Law Review, 86*(6), 1552–1563.

Modell, S. J., & Mak, S. (2008). A preliminary assessment of police officers' knowledge and perceptions of persons with disabilities. *Intellectual and Developmental Disabilities, 46*(3), 183–189.

Murrie, D. C., Warren, J. I., Kristiansson, M., & Dietz, P. E. (2002). Asperger's syndrome in forensic settings. *International Journal of Forensic Mental Health, 1*(1), 59–70.

Petersilia, J. R. (2001). Crime victims with developmental disabilities: A review essay. *Criminal Justice and Behavior, 28*(6), 655–694.

Rabe-Hemp, C. E. (2008). Female officers and the ethic of care: Does officer gender impact police behaviors? *Journal of Criminal Justice, 36*(5), 426–434.

Schuck, A. M., & Rabe-Hemp, C. (2007). Women police: The use of force by and against female officers. *Women & Criminal Justice, 16*(4), 91–117.

Teagardin, J., Dixon, D. R., Smith, M. N., & Granpeesheh, D. (2012). Randomized trial of law enforcement training on autism spectrum disorders. *Research in Autism Spectrum Disorders, 6*, 1113–1118. https://doi.org/10.1016/j.rasd.2012.02.002.

Tint, A., Palucka, A. M., Bradley, E., Weiss, J. A., & Lunsky, Y. (2017). Correlates of police involvement among adolescents and adults with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 47*, 2639–2647. https://doi.org/10.1007/s10803-017-3182.

Watson, A. C., & Fulambarker, A. J. (2012). The Crisis Intervention Team model of police response to mental health crises: A primer for mental health practitioners. *Best Practices in Mental Health, 8*(2), 71.

Law enforcement officers' interactions with autistic individuals: Commonly reported incidents and use of force

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A B S T R A C T

Little research exists examining interactions between law enforcement officers (LEOs) and autistic individuals. The present study includes responses from 130 LEOs who participated in autism-specific training and completed surveys assessing professional experiences responding to calls that involved individuals with known autism spectrum disorder (ASD) diagnosis. The purpose of the present study was to determine the types of incidents LEOs respond to involving autistic people, and the level of force used in response to the incident. Analysis revealed four categories captured the majority of reported incidents: disruptive behavior, suspected abuse/neglect, elopement, and noncriminal behavior. The most commonly reported responses by LEOs included providing support and extreme controlling behaviors, with female officers more likely to report utilizing supportive behaviors and less force compared to male counterparts.

1. Introduction

Individuals diagnosed with autism spectrum disorder (ASD) are significantly more likely to experience contact with law enforcement officers (LEOs) than others in the general public (Curry et al., 1993). Recent research suggests between 8 % and 20 % of autistic individuals and/or their caregivers have experienced LEO contact, with approximately 5 % leading to arrest (Rava et al., 2017; Tint et al., 2017; Turcotte, Shea et al., 2018), and 20 % leading to involuntary psychiatric hospitalization evaluation (Gardner & Campbell, 2020). The disproportionate contact with LEOs in this population is often attributed to the core impairments characterized by ASD, including deficits with social interactions and communication as well as atypical behaviors (Clark Mogavero, 2019). The rate of individuals diagnosed with autism has continued to increase over time, with recent estimates by the Center for Disease Control (CDC) suggesting that in the United States 2.27 % of children (Maenner et al., 2021) and 2.21 % of adults (Dietz et al., 2020) meet criteria for ASD. Despite the continued increase in autism diagnosis, many LEOs have not received autism-specific training to assure they are able to recognize when an individual has autism, and adjust their behavior accordingly when responding to calls (Gardner & Campbell, 2020; Railey et al., 2020).

LEOs consistently report receiving limited professional training in autism. Within a random sample of LEOs in the United States, Modell and Mak (2008) reported 80 % were unable to accurately identify ASD characteristics. More recently, among 72 LEOs who completed a survey of ASD knowledge, Gardner and colleagues (2019) found the majority (72.2 %) reported no formal training in

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autism spectrum disorder, despite working in a state (i.e., Florida) that has required LEOs to complete such training since 2016. Although many police departments throughout the United States provide autism training, these trainings are often options and vary widely in length, format and quality. More recently, research is emerging regarding the types of autism training that LEOs perceive as the most effective in increasing knowledge, self-efficacy, and changing their intentions for future practice though little is known about the long-term impact of these trainings (Gardner et al., 2019; Holloway et al., 2022; Love et al., 2022; Shea et al., 2021).

The discrepancy between increased prevalence rates of autism and opportunity for high quality training in autism for LEOs can result in tragic consequences (Copenhaver & Tewksbury, 2019). For instance, in Pinellas County, Florida a police officer was terminated after taunting and berating a 13-year-old student diagnosed with ASD and intellectual disability as a means of discipline following a "meltdown" at the student's school (Reeves, 2019). Additionally, two Los Angeles police officers killed a 27-year-old man diagnosed with ASD due to misinterpreting characteristics of ASD as threatening as he reached in his pocket to retrieve what was later identified to be his mobile phone (Anonymous, 2011). In another unfortunate example, an 18-year-old man with ASD sustained several injuries after Georgia police stunned him with a Taser and handcuffed him due to disorderly conduct (Black, 2010). Incidences of excessive use of force (e.g., threats, physical restraint, search, arrest) are more likely to occur with male LEOs when compared to their female colleagues which suggests the influence of gender on police behavior (Gardner & Campbell, 2020; Schuck & Rabe-Hemp, 2007).

LEOs who lack awareness and training in autism have responded to calls in ways that have negatively impacted perception of LEOs within the ASD community (Salerno & Schuller, 2019). Crane et al. (2016) found that less than 20 % of LEO interactions were rated as "satisfactory" by caregivers and autistic adults. More recent studies have continued to document negative perceptions of interactions with LEOs by autistic individuals and their caregivers, while highlighting their fear of future encounters with LEOs, who may lack of awareness of autism and have the potential to misuse force due to misinterpreting autistic behaviors (Gibbs & Haas, 2020; Haas & Gibbs, 2021; Wallace et al., 2021).

LEO contact with autistic individuals occurs across varied circumstances. In an analysis of media reports involving LEOs and individuals with ASD, Copenhaver and Tewksbury (2019) reported most common interactions included elopement (i.e., wandering), being a victim of crime, and positive accounts of LEOs and autistic individuals. As noted, characteristics of ASD may appear "odd" and be misinterpreted as threatening to others, prompting LEOs to respond to calls that are noncriminal in origin. For example, an autistic person may inappropriately intrude upon the social boundaries of others (e.g., stand in close proximity to others, touch people without permission), appear to be under the influence of substances due to repetitive behaviors (e.g., hand flapping, head banging), or alarm members of the public due to sudden mood changes or panic when faced with unexpected change. Although research indicates that individuals with ASD interact with LEOs due to a variety of circumstances (e.g., elopement/wandering, disruptive behavior, victimization; Gibbs & Haas, 2020), there is little research surveying LEOs regarding the types of calls they respond to that include an autistic person, and the level of force LEOs report using to resolve these incidents.

Previous research supports female LEOs were less likely to report use of handcuffs or force when responding to ASD-related calls compared to their male counterparts (Gardner & Campbell, 2020). Unfortunately, females are underrepresented in law enforcement across the United States (Bureau of Justice Statistics, 2020), a trend that has remained stagnant with little improvement over the last two decades (Yu & Viswanath, 2022). General-purpose law enforcement agencies include municipal, county, and regional police departments; most sheriffs' offices, and primary state and highway patrol agencies where approximately 1 in 8 local police officers, and 1 in 10 first-line supervisors are female (Hyland & Davis, 2019). Although female officers may be less likely to use force when responding to ASD-related calls, it is unlikely that responding officers will be female given the vast majority of LEOs in general-purpose law enforcement agencies are male.

1.1. Context and purpose of the study

The primary author created a 4-hour training program for LEOs that prepares officers to recognize signs and symptoms of ASD, and to effectively respond to situations involving autistic individuals without use of excessive force. Immediately prior to training, LEOs were provided questionnaires that allowed them to reported on the most recent (MR) call or incident they responded to that involved a person they knew to have ASD, and the most significant (MS) call or incident they responded to within the last year that involved a person known to have ASD. In the context of this study, the MS call is the one LEOs reported they perceived as the most stressful or intense call. The purpose of the present study was to conduct an exploratory and descriptive analysis of the types of incidents that LEOs responded to involving autistic individuals, including identifying categories for the reason they were called and outcomes of these interactions. This study is an extension of prior research conducted by Gardner and Campbell (2020) which described participant's prior training in ASD, and assessed changes in knowledge of autism and self-confidence, and self-monitoring pre- and post-training. The present study provides further analysis of LEOs responses to open-ended survey questions regarding the MR and MS calls they had responded to that included individuals the officer knew to have autism, and the outcomes of these calls based on qualitative analysis of LEOs written responses.

2. Method

2.1. Participants

Two-hundred and twenty-nine LEOs from police and sheriff departments in a large metropolitan area of the state of Florida attended seven separate training sessions. Of those 229 LEOs, 56.7 % ($N = 130$) reported they had responded to a call or situation

involving an autistic individual within the last year. Data from these 130 participants are included within this study. Participants were 63.1 % male with a mean age of 41.02 years (*SD* = 10.4) and a mean of 12.98 years of law enforcement experience (*SD* = 9.38; see Table 1 for additional information about participants). Study procedures were approved by the first author's Institutional Review Board.

2.2. Measures

2.2.1. Experiences with autism

Participants completed Gardner et al.'s (2019) demographic questionnaire that included questions about LEO's personal and professional experience with autism, prior autism training, number of autism-related call or incident responded to over the prior 12 months, and if officers felt well-trained to respond to these calls (Table 1). Please see Gardner and Campbell (2020) for an analysis of officer's knowledge of autism, confidence in responding, self-monitoring and changes in confidence.

2.2.2. Response to most recent (MR) call/incident

LEOs were asked to provide information about the most recent (MR) call or incident they responded to that involved an autistic person. LEOs provided the primary concern for the call and the outcome of the call including use of force.

2.2.3. Response to most stressful/intense (MS) call/incident

LEOs were also asked to provide information about the most stressful/intense (MS) call or incident they responded to that involved an autistic person within the last 12 months. LEOs provided the primary concern for the call, and the outcome of the call including use of force. A copy of the questionnaire is available upon request from the first author.

Table 1
Participant characteristics and experiences with autism (N 130).

Variable	*n*	%	*Min*	*Max*	*M*	*SD*
Gender						
Male	82	63.1				
Female	48	36.9				
Number of years of law enforcement experience			0.00	32.00	12.97	9.38
Age (yr)			21.00	65.00	41.02	10.39
Do you have a personal relationship with an autistic person?						
No	80	61.5				
Yes	50	38.5				
What is your closest relationship to an autistic person?						
No experience	27	20.8				
Through work/Other	33	25.4				
Friend/acquaintance	30	23.1				
Immediate family	21	16.2				
Extended family	16	12.3				
Missing	3	2.3				
Have you participated in professional training about autism?						
Yes	55	42.3				
No	74	56.9				
Missing	1	0.8				
How many calls have you responded to that included an autistic person over the past 12 months?						
One	29	22.3				
Two	19	14.6				
Three	14	10.8				
Four	11	8.5				
Five	12	9.2				
Six or more	45	34.6				
Did you feel that you were well trained or adequately prepared to respond to your most recent call?						
Yes	81	62.3				
No	48	36.9				
Missing	1	0.8				
Did you feel that you were well trained or adequately prepared to respond to your most significant call?						
Yes	67	65.7				
No	35	34.3				
Why are you seeking training in autism at this time?						
Required by employer	76	58.5				
Personal interest	32	24.6				
Both	21	16.2				
Missing	1	0.8				

2.3. Procedures

LEOs who attended the training were invited to complete pre-and post-questionnaires. The pre-questionnaire asks LEO for the number of calls or incidents they have responded to involving autistic individuals, including questions regarding the MR and MS call/incident.

2.4. Analysis

Investigators utilized a grounded theory approach to code and summarize responses (Charmaz, 2014). The constant comparative method (CCM) was used to identify categories from LEO-described reasons for calls. LEOs' responses for the type of call received for both their MR and MS interactions were analyzed by three of the authors (XX, XX, XX). LEO responses were entered into a data file and independently reviewed by authors who identified categories for types of calls. Participant responses yielded a single code per type of incident. Authors met to discuss content responses and reached consensus coding for each response. Seven categories were created for the type of incident reported. The outcomes of the reported calls were analyzed by the same authors and six categories were created for the outcome of the interactions. When creating categories for outcomes, authors utilized Rabe-Hemp (2008) categories for initial coding and used the CCM to identify additional codes that did not fit into the initial coding scheme.

2.4.1. Coding of calls/incidents

LEO responses for MR and MS calls/incidents were independently coded in one of the seven categories by authors to determine the type of incident based on the responses provided by LEOs on the pre-questionnaire. The seven categories for type of incident were: (a) suspected abuse or neglect/victim, (b) elopement/missing person, (c) aggression toward self/others, (d) disruptive behavior without aggression, (e) mental health concern, (f) suspect of crime, (g) noncriminal act/other (see Table 2). Initial coding agreement for the MR call/incident ranged from $\kappa = 0.89$ to.96 across three coders (authors XX, XX, XX) indicating substantial agreement (Shrout, 1998). Initial agreement for the MS call/incident ranged from $\kappa = 0.81$ to.97 again indicating substantial agreement.

2.4.2. Coding of outcomes

LEO responses to the outcomes from their MR and MS calls/incidents were independently coded by authors into one of six categories to determine the outcome of the incident based on the responses provided by LEOs on the pre-questionnaire. The six outcome categories were: (a) supporting police behavior, (b) low level controlling behavior, (c) extreme level controlling behavior, (d) involuntary psychiatric hospitalization evaluation, (e) involuntary psychiatric hospitalization evaluation and extreme level controlling behavior, and (f) cannot determine. Supporting police behavior was defined as a LEO providing counseling, resources, encouraging the family to seek help from family or friends, or providing assistance to the citizen. Low level controlling behavior was defined as any behavior in which the LEO advised or commanded the individual to leave the scene due to disorderly behavior. Extreme level controlling behavior was indicated when LEOs reported threatening, searching, interrogating, physically restraining, or arresting the individual. Extreme level controlling and involuntary psychiatric hospitalization evaluation included LEOs reported use of both force and involuntary psychiatric hospitalization evaluation as the outcome. The 'cannot determine' code was used when there was not enough information provided to determine the outcome of the call. Initial coding agreement for the outcome of the MR call/incident ranged from $\kappa = 0.79$ to.96 indicating moderate to substantial agreement (Shrout, 1998). Initial coding agreement for the outcome of the MS call/incident ranged from $\kappa = 0.86$ to.99 indicating substantial agreement (Shrout, 1998). The six outcome categories were reduced to four categories, as presented in Table 3, with Extreme Level Control including those outcomes coded as including extreme

Table 2
Calls responded to by LEOs involving autistic individuals.

Reasons	*n*	%
Most Recent Call *(n = 130)[a]*		
Disruptive Behavior without Aggression	47	36.2
Suspected Abuse or Neglect/Victim	26	20.0
Noncriminal behavior/Other	19	14.6
Aggression towards Self or Other	17	13.1
Elopement or Missing Individual	15	11.5
Suspect of Crime	3	2.3
Mental Health Concern	3	2.3
Most Significant Call Over Past 12 Months *(n = 102)[b]*		
Aggression towards Self or Other	27	20.8
Disruptive Behavior without Aggression	25	19.2
Elopement or Missing Individual	17	13.1
Suspected Abuse or Neglect/Victim	17	13.1
Noncriminal behavior/Other	7	5.4
Suspect of Crime	6	4.6
Mental Health Concern	3	2.7

Note. [a] Thirty-five officers (26.9 %) reported their most recent call was also the most significant. [b] Twenty-eight officers (21.5 %) did not provide a response for a most significant call.

level controlling behaviors (e.g., physical restraint, arrest), involuntary psychiatric hospitalization evaluation, or a combination thereof.

3. Results

All LEOs included in the sample reported they had responded to a call or incident that included an autistic person within the last 12 months. The majority of LEOs reported they did not have a relationship with an autistic person ($n = 80$, 61.50 %), and when asked their closest relationship to someone with autism, 25.4 % ($n = 33$) reported interacting with autistic persons through their work (i.e., other), and 23.1 % ($n = 30$) reported knowing a non-familial friend or acquaintance with autism. About 42 % of the sample had previously completed training related to autism, and the number of calls/incidents LEOs reported responding to within the last year ranged between one to "too many to count," with 34.6 % ($n = 45$) of LEOs reporting they had responded to six or more incidents. Despite approximately 57 % of LEOs reporting they had no previous training in autism, the majority reported they felt well trained to respond to their MR and MS incident/call within the last year (62.3 % and 65.7 %, respectively). Almost three-fourths of LEOs who attended the training reported their attendance was required by their employer (see Table 1 for additional information).

3.1. LEO's reporting of most recent (MR) call/incident

The most commonly reported MR category ($n = 47$; 36.2 %) involved LEOs responding to disruptive behavior without aggression (e.g., 'out of control behavior,' 'diagnosed individual acting out'). The second most common category ($n = 26$; 20.0 %) was response to suspected abuse, neglect or victimization of an autistic person. The third most common category ($n = 19$; 14.6 %) included response to noncriminal behavior/other (e.g., 'unable to get a social cue,' 'subject was walking area of sporting event while displaying large sum of money'). The fourth most common category ($n = 17$; 13.1 %) involved aggression towards self or others (e.g., 'slapped caregiver,' 'subject was hurting himself'). See Table 2 for more information on reporting of MR call/incident by LEOs.

3.2. LEO's reporting of most significant (MS) call/incident

LEOs reported aggression toward self/others as the largest category ($n = 27$; 20.8 %).
of MS call/incident responded to within the last twelve months. This was closely followed by disruptive behavior without aggression ($n = 25$; 19.2 %). The third most common category included elopement/missing persons ($n = 17$; 13.1 %) and suspected abuse, neglect or victimization of an autistic person ($n = 17$; 13.1 %). See Table 2 for further reporting on MS calls.

3.3. Outcome and level of force used for most recent (MR) call/incident

The most common outcome ($n = 72$; 55.4 %) involved providing support to the individual or family (e.g., 'conversation only,' 'referred to Doctor;' see Table 3). The second most common outcome ($n = 36$; 27.7 %) involved use of extreme level controlling behaviors (e.g., handcuffed, arrested, involuntary psychiatric hospitalization evaluation). Within the categories collapsed into extreme level controlling behaviors, involuntary psychiatric hospitalization evaluation accounted for 44.4 % ($n = 16$), force combined with involuntary psychiatric hospitalization evaluation accounted for 33.3 % of responses ($n = 12$) and LEO use of controlling behavior (e. g., 'handcuffed,' 'arrested') accounted for 22.2 % of responses ($n = 8$). The third most common outcome ($n = 12$; 9.2 %) involved low level controlling behavior (e.g., 'person left with caregiver').

3.4. Outcome and level of force used for MS call/incident

LEOs reported extreme level controlling behaviors (e.g., handcuff, arrest, involuntary psychiatric hospitalization evaluation) as the most common outcome ($n = 44$, 43.1 %). Within the categories collapsed into extreme level controlling behaviors, physical force

Table 3
Outcome of LEO calls with autistic individuals.

Outcomes	n	%
Most Recent Call *($n = 130$)[a]*		
Supporting Behavior	72	55.4
Extreme Level Control	36	27.7
Low Level Control	12	9.2
Cannot Determine	10	7.7
Most Significant Call Over Past 12 Months *($n = 102$)[b]*		
Extreme Level Control	44	43.1
Supporting Behavior	37	36.3
Low Level Control	11	10.8
Cannot Determine	10	9.8

Note. [a]   Thirty-five officers (26.9 %) reported their most recent call was also the most significant. [b]
Twenty-eight officers (21.5 %) did not provide a response for a most significant call.

5

combined with involuntary psychiatric hospitalization evaluation accounted for 38.6 % of responses ($n = 17$), LEO use of controlling behaviors (e.g., 'arrested') accounted for 34 % of responses ($n = 15$), and involuntary psychiatric hospitalization evaluation accounted for 27.3 % of responses ($n = 12$).). The second most common outcome ($n = 37$; 36.5 %) involved providing support to the individual or family (e.g., 'calmed them down'). The third most common outcome ($n = 11$; 10.8 %) was low level controlling behavior (e.g., 'everyone separated for the night').

3.5. Testing for differences across level of force for most recent (MR) call/incident

We eliminated the "Cannot Determine" group ($n = 10$) from the MR analysis presented in this section. For categorical variables, we examined whether level of force groups differed on prior training received, type of call, and gender. For continuous variables, we examined whether level of force groups differed on measures of autism knowledge, pretraining confidence in responding to calls, and perceived ability to self-monitor their performance.

For officers' most recent calls, level of force used did not differ across *type of call*, χ^2 (8, $N = 120$) = 10.25, $p = .25$, *prior training*, χ^2 (2, $N = 119$) = 2.96, $p = .23$, or officer *gender*, χ^2 (2, $N = 120$) = 1.49, $p = .48$. Groups did not differ on pretraining *confidence* in responding to calls, $F(2, 115) = 0.40$, $p = .67$, *autism knowledge*, $F(2, 117) = 0.89$, $p = .42$, or *perceived ability to self-monitor*, $F(2, 116) = 0.37$, $p = .69$.

3.6. Testing for differences across level of force for most significant (MS) call/incident

We eliminated the "Cannot Determine" group ($n = 10$) from the MS analysis. For categorical variables, we examined whether level of force groups differed on prior training received, type of call, and gender. For continuous variables, we examined whether level of force groups differed on measures of autism knowledge, pretraining confidence in responding to calls, and perceived ability to self-monitor their performance.

For officers' most significant calls, level of force used did not differ across *type of call*, χ^2 (8, $N = 91$) = 14.35, $p = .073$, or officers' *prior training*, χ^2 (2, $N = 92$) = 0.84, $p = .66$. In contrast, level of force used differed for officer *gender*, χ^2 (2, $N = 92$) = 6.05, $p = .04$. Female officers were more likely to use low level controlling behavior when compared to male officers, $z = 2.14$, $p = .03$. There was also a trend for female officers to be less likely use extreme controlling behavior when compared to male officers, $z = 1.89$, $p = .06$. Groups did not differ on *pretraining confidence* in responding to calls, $F(2, 89) = 1.41$, $p = .25$, autism *knowledge*, $F(2, 89) = 0.31$, $p = .73$, or *perceived ability to self-monitor*, $F(2, 89) = 1.40$, $p = .25$.

4. Discussion

4.1. Review of main findings

The majority of LEOs included in this study reported they had no prior professional training specific to ASD, although all had professional experience that included an autistic person within the last year. The number of call/incidents ranged anywhere from one to "too many to recall" with approximately a third of LEOs reporting they had responded to six or more incidents within the last year. Despite no formal training in autism, more than half reported feeling well prepared to respond to these calls/incidents. For some LEOs in the sample, this feeling of preparedness may be attributed to personal relationships with an autistic person as slightly more than a third of LEOs reported having such a relationship either through work, friend/acquaintances, or family. The majority of LEOs reported they were attending the autism training per requirements from their employer, which is encouraging as LEOs included in this study work in departments in a state that requires formal training for interacting with autistic individuals.

Responses describing MR and MS calls/incidents reveal that LEOs reported disruptive behavior as their most common recent call, and physical aggression toward self or others as the most common significant call to which they responded. For the MR call/incident, LEOs reported responding most often due to disruptive behaviors without physical aggression toward self or others. Examples of responses provided by LEOs within this category include an autistic person demonstrating unusual behavior, acting out or engaging in disorderly conduct, or other uncontrollable behaviors. The most commonly reported MS call/incident were those that included acts of physical aggression toward self or others. Examples included individuals harming themselves, destroying property, and acting violently towards family members. These findings support the need for training that provides LEOs with skills to support caregivers of autistic individuals who demonstrate disruptive and aggressive behaviors. Caregivers who call for LEO assistance in the face of disruptive behaviors may do so as a last resort given a lack of available alternatives, however it is important that responding LEOs are well equipped and trained as first responders to assist in a manner that does exacerbate the situation. As such, professional training is needed to assure LEOs are well equipped to support caregivers when they need such assistance. LEOs increased knowledge and understanding of how to appropriately respond to calls/incidents involving autistic people is critically important, especially considering that autistic individuals presenting with externalizing behaviors and/or comorbid psychiatric disorders are at heightened risk for interactions with LEOs (e.g., Greenberg & Lippold, 2013; Salerno & Schuller, 2019).

The second most commonly reported MR call/incident, and third most common MS call/incident, included reports of suspected abuse or neglect. This is in-line with previous research findings that support that autistic children are more likely to receive services from the child protection system (CPS) than children without disabilities (Fisher et al., 2019; Hall-Lande et al., 2015). Though not all cases resulted in substantiated reports of abuse or neglect, LEOs reported 20 % of their MR calls and 13 % of MS calls were to assess for suspected abuse or neglect of an autistic person. Examples of LEO responses included in this category were those that mentioned child

abuse, physical injury/inadequate supervision, and medical neglect as the reason for the call.

Elopement, wandering, or missing persons calls were reported to occur at the same level as suspected abuse/neglect for the MS call/ incident responded to within the last twelve months. Studies show that between one-third to one-half of autistic children exhibit elopement behavior, which can result in injury or fatality (Periera-Smith et al., 2019; McIlwain & Fournier, 2017). Given that risk of elopement is increased for children with limited communication skills across age ranges (Pereira-Smith et al., 2019), training LEOs in techniques that may help them communicate with autistic individuals is paramount for LEOs and other first responders who are searching for autistic persons to assist with communication and assessing individuals needs when found.

Finally, the third most common MR call/incident category reported by LEOs was for autistic individuals who were engaged in noncriminal behaviors. Responses from LEOs that fell into this category included autistic individuals who demonstrated social interaction difficulties (e.g., communication difficulties, misreading emotional cues of others, upset due to how they were treated by another person), or those who were not following behavioral norms expected in certain situations (e.g., showing large sum of money while in public). There is a strong potential for LEOs who do not know about autism to misinterpret behaviors commonly demonstrated by autistic people as challenging or disrespectful (Railey et al., 2020). As such, mandatory training for LEOs should include recognizing signs and symptoms of autism, as well as increase their ability to appropriately advocate for, and support autistic individuals and their caregivers in a way that allows them to feel safe in community settings where others may misunderstand or misinterpret the intentions of their behaviors.

In responding to calls/incidents, more than half of LEOs reported resolving the call by engaging in supporting behaviors only during their MR call/incident, which included conversational exchanges, helping the person to calm down, providing referrals for additional help, and successful resolution of the presenting situation. However, the second most common MR response, and the most commonly reported response to MS call/incidents, included the use of extreme controlling behaviors. Although extreme controlling behaviors can include hand-cuffing or arresting individuals, LEOs more often reported having autistic individuals evaluated for involuntary psychiatric hospitalization when they demonstrated extreme behavioral difficulties. In the state of Florida, an involuntary psychiatric hospitalization evaluation (also known as a Baker Act; BA-52) can be initiated by an officer which results in examination by a physician or a clinical psychologist at a hospital or receiving facility. To initiate a Baker Act, there must be a diagnosis of mental illness consistent with the definition in the law, refusal or inability to determine examination is needed, and passive or active danger. The definition of mental illness provided in the *Florida Statutes* Chapter 394 (Florida Mental Health Act, 1971/, 2021) excludes developmental disabilities, including autism, from the statutory definition of mental illness. As such, LEOs cannot initiate a Baker Act based on autism alone. However, they can initiate a Baker Act for an autistic person if they believe they also present with mental illness in addition to autism. Often LEOs report utilizing a Baker Act for autistic individuals who demonstrate aggressive and/or violent behaviors if they determine the individual presents as a danger to themselves and other members of the household. LEOs often reported when forced to choose between arrest or involuntary psychiatric hospitalization evaluation, a mental health facility seemed the better choice even if the individual did not present with significant mental illness. Although initiating an involuntary psychiatric evaluation may alleviate the immediate danger of a situation for an autistic person who does not have co-occurring mental health need, it is unlikely to have a lasting benefit as the Baker Act will be rescinded if it is determined the violent behavior is an aspect of the individual's neuro-developmental disability and the individual does not have a diagnosis of mental illness consistent with the law (Lenderman & Cadigan, 2016).

Female LEOs were more likely than male LEOs to respond to calls by utilizing low level controlling behaviors, and somewhat less likely than male counterparts to use extreme controlling behaviors, such as utilizing physical restraint, arrest or involuntary psychiatric hospitalization evaluation. Differences in use of force and LEO gender suggests that involvement of female officers during ASD-related calls may result in more supportive behaviors and less use of extreme control (Gardner et al., 2019). It is likely that use of force during calls/incidents involves a host of variables, such as behavior exhibited by the autistic individual, race/ethnicity of the autistic individual and their caregiver, and if the situation is successfully de-escalated. The findings of the current study replicate prior work (e. g., Gardner et al., 2019; Rabe-Hemp, 2008; Schuck & Rabe-Hemp, 2007) that suggests there is a robust effect of female gender on reduced use of force during policing. A tentative implication of these findings is a recommendation to include a female officer in response to calls involving autistic individuals when possible.

4.2. What this paper adds?

Findings support that LEOs are increasingly responding to calls and incidents that involve autistic individuals and their caregivers. LEOs reported the most common types of calls they respond to involved disruptive behavior with or without aggression, elopement/ wandering, suspected abuse/neglect, and unusual behaviors in social situations. By increasing awareness and knowledge of autism, LEOs will be better equipped to respond with supportive behaviors to assist autistic individuals and their caregivers when responding to calls/incidents in the line of duty.

4.3. Limitations

The methodology of the current study included only self-report measures from LEOs, without the inclusion of other various sources of information. Reporting of incidents from the perspective of autistic individuals and their caregivers may offer differ from LEOs and add valuable information regarding incidents for which they seek LEO support, and LEO's response to the calls for help including level of force used. The veracity of the type of calls and outcomes included in this study is unknown and is subject to reports provided by LEOs. Thus, the reported outcomes are dependent on recall and potential over- or under-reporting by LEOs of circumstances and level

of force used. This study does not allow for any determination of how this training impacts LEOs use of force when responding to future calls, or any long-term outcomes of the training or changes in LEOs response behaviors over time. Additionally, the current study did not ask LEOs to report on the race/ethnicity of the autistic persons or their family members, nor did it not ask the race/ethnicity of LEOs.

4.4. Directions for future research

Recommendations for future research include comparing reported call outcomes from the perspective of autistic individuals, caregivers, and LEOs to determine if reported experiences align between law enforcement and citizens. Surveying caregivers and autistic individuals about the type of support they are seeking from law enforcement, and their expectations for outcomes of calls is also important to determine the intervention they are seeking from first responders when placing calls to 911. Additional research is needed to determine if and/or how autism-specific training impacts the intensity of force utilized by LEOs when responding to calls and the outcome of calls following ASD training. Previous research examining the experiences and perceptions of people with autism resulted in low ratings of satisfaction and outcome favorability (Salerno & Schuller, 2019). In addition, research into outcomes of training LEOs in how to best respond to encounters involving individuals with disabilities found retention of information over time waned while perceived level of comfort level remained relatively stable (Wood & Watson, 2017). Thus, outcome studies examining retention of LEOs knowledge of autism and the impact of training on outcomes of calls involving autistic persons is needed.

Future research is also needed to inform how first responders and behavioral health providers can better meet the needs of autistic individuals and their caregivers who present with behavioral characteristics that make LEO intervention more likely. For caregivers who are seek support from law enforcement due to severe behavioral difficulties, future research is needed to determine how to assure the provision of appropriate preventative behavioral therapies/interventions, and implementation of evidence-based training for caregivers in how to manage significant behavioral difficulties that may evolve and change over time. Training in de-escalation and, perhaps, safe physical management techniques for caregivers is needed to assure that autistic individuals and caregivers remain safe during volatile situations that involve physical aggression. Future research is needed to determine the efficacy and long-term outcomes of specialized training in autism across LEOs, caregivers, and other first responders to determine the real-world impact of these programs on safe and humane responding to emergency situations involving autistic people.

Additional research is needed to determine the effectiveness of autism-specific training on outcomes of calls, and what situations require LEOs to use extreme level controlling behaviors. In addition, if extreme controlling behaviors include involuntary psychiatric hospitalization evaluation, future research should investigate if this outcome diverts autistic individuals from ongoing involvement with LEOs and the criminal justice system over time. In addition, future research should investigate the role of LEO gender on outcomes of calls from the perspective of others. Policing stereotypes may influence civilian's perceptions, with previous research demonstrating that female officers are often perceived as similarly aggressive as male officers when in uniform (Simpson & Croft, 2021). As the current research included responses only from LEOs, responses from autistic individuals and their caregivers need to be assessed to determine if they perceive a difference by gender of the LEO in responding to the call and subsequent outcomes.

Furthermore, little research exists focused to the intersection of race and autism in encounters with law enforcement. Studies focused on the intersectionality of dis/ability and race are necessary to better understand and mitigate complex challenges that may result in adverse experiences between LEOs and non-white autistic individuals and their caregivers (Hutson et al., 2022).

5. Conclusion

In a state where LEO training in autism has been mandated for six years, the majority of LEOs reported they had previously received no formal training in autism. Despite this lack of prior training in autism, LEOs reported feeling adequately prepared to respond to calls/incidents that involved autistic individuals. As such, LEOs are responding to calls and incidents involving autistic individuals, though they lack professional training in how to recognize signs and symptoms of autism and respond in kind. LEOs report they are most often responding to incidents that include autistic people who demonstrate disruptive behaviors, are suspected victims of abuse or neglect, have eloped or wandered away from caregivers, or exhibit unusual but noncriminal behavior. Self-report from LEOs revealed supportive behaviors were more likely to be demonstrated by female officers who utilized less force when responding to autistic individuals compared to male LEOs.

Given the current incidence rate of autism across the lifespan, LEOs are likely to interact with individuals with ASD within their professional role. Although some states within the United States require autism specific training, there are not set standards for the content of the training, and there are practical challenges regarding how and when officers should participate in ASD-related training. Previous research has documented the potential value of autism-specific training for LEOs (Gardner et al., 2019), however, additional research is needed to determine how training in ASD and other factors impact LEO behaviors in real-world settings when responding to calls and incidents that involve individuals with ASD.

Compliance with ethical standards

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.
Informed consent was obtained from all individual participants included in the study.

Public Comments via Email
July 25, 2024 Advisory Council Meeting

L. Gardner et al.   Research in Developmental Disabilities 131 (2022) 104371

Conflict of interest

All authors declares no conflict of interest. The authors have no relevant financial or non-financial interests to disclose.

Data availability

Data will be made available on request.

References

Anonymous. (2011). Constructive discharge. *Police Department Disciplinary Bulletin, 38*(4), 3–5.

Black, R. (2010, May 24). Georgia police taser Clifford Grevemberg, an autistic teen with a heart condition. *Daily news*. Retrieved from http://www.nydailynews.com.

Bureau of Justice Statistics. (2020). *Law enforcement management and administrative statistics (LEMAS)*, 2016. Inter-University Consortium for Political and Social Research.

Charmaz, K. (2014). *Constructing grounded theory* (2nd ed.). London: Sage.

Clark Mogavero, M. (2019). What do criminal justice students know about autism? An exploratory study among future professionals. *Journal of Police and Criminal Psychology, 34*, 428–438. https://doi.org/10.1007/s11896-018-9302-0

Copenhaver, A., & Tewksbury, R. (2019). Interactions between autistic individuals and law enforcement: A mixed-methods exploratory study. *American Journal of Criminal Justice, 44*, 309–333. https://doi.org/10.1007/s12103-018-9452-8

Crane, L., Maras, K. L., Hawken, T., Mulcahy, S., & Memon, A. (2016). Experiences of autism spectrum disorder and policing in England and Wales: Surveying police and the Autism community. *Journal of Autism and Developmental Disorders, 46*(6), 2028–2041. https://doi.org/10.1007/s10803-016-2729-1

Curry, K., Posluszny M., Kraska S. (1993). *Training criminal justice personnel to recognize offenders with disabilities*. Office of Special Education and Rehabilitative Services News in press, Washington, DC.

Dietz, P.M., Rose, C.E., McArthur, D., & Maenner, M. (2020). National and state estimates of adults with autism spectrum disorder. *Journal of Autism and Developmental Disorders*. Retrieved from ⟨https://doi.org/10.1007/s10803–020-04494–4⟩.

Fisher, M. H., Epstein, R. A., Urbano, R. C., Vehorn, A., Cull, M. J., & Warren, Z. (2019). A population-based examination of maltreatment referrals and substantiation for children with autism spectrum disorder. *Autism, 23*(5), 1335–1340.

Florida Mental Health Act, *Fla. Stat. § 394* (1971 & rev. 2021). Retrieved from ⟨www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&URL=0300–0399/0394/0394.html⟩.

Gardner, L., & Campbell, J.M. (2020). Law enforcement officers' preparation for calls involving autism: Prior experiences and response to training. *Journal of Autism and Developmental Disorders*. Advanced online publication. Retrieved from ⟨https://doi.org/10.1007/s10803–020-04485–5⟩.

Gardner, L., Campbell, J. M., & Westdal, J. (2019). Brief report: Descriptive analysis of law enforcement officers' experiences with and knowledge of autism. *Journal of Autism and Developmental Disorders, 49*(3), 1278–1283. https://doi.org/10.1007/s10803-018-3794-4

Gibbs, V., & Haas, K. (2020). Interactions between the police and the autistic community in Australia: Experiences and perspectives of autistic adults and parents/carers. *Journal of Autism and Developmental Disorders, 50*(12), 4513–4526.

Greenberg, M. T., & Lippold, M. A. (2013). Promoting healthy outcomes among youth with multiple risks: Innovative approaches. *Annual Review Public Health, 34*, 253–270.

Haas, K., & Gibbs, V. (2021). Does a Person's autism play a role in their interactions with police: The perceptions of autistic adults and parent/carers. *Journal of Autism and Developmental Disorders, 51*(5), 1628–1640.

Hall-Lande, J., Hewitt, A., Mishra, S., et al. (2015). Involvement of children with autism spectrum disorder (ASD) in the child protection system. *Focus on Autism and Other Developmental Disabilities, 30*(4), 237–248.

Holloway, C., Munro, N., Cossburn, K., & Ropar, D. (2022). A pilot study of co-produced autism training for police custody staff: evaluating the impact on perceived knowledge change and behavior intentions. *Policing An International Journal*. ⟨https://doi.org/10.1108/PIJPSM-11-2021-0159⟩.

Hutson, T.M., Hassrick, E.M., Fernandes, S., Walton, J., Bouvier-Weinber, K., Radcliffe, A., & Allen-Handy, A. (2022). "I'm just different–that's all–I'm so sorry…": Black men, ASD and the urgent need for DisCrit Theory in police encounters. *Policing: An International Journal.*

Hyland, S. S., & Davis, E. (2019). *Local police departments, 2016: Personnel*. Las Vegas: United States Department of Justice Office of Justice Programs Bureau of Justice Statistics.

Lenderman, M., & Cadigan, S. (2016). *Baker Act Benchguide*. Florida Court Education Council's Publications Committee. Retrieved from https://www.flcourts.org/content/download/215973/file/Baker-Act-Benchguide.pdf. (Accessed 20 September 2022).

Love, A.M., Railey, K.S., & Jones, C.P. (2022). Examining the sources of police confidence when working with autistic individuals. *Policing: An International Journal.*

Maenner, M. J., Shaw, K. A., Bakian, A. V., Bilder, D. A., Durkin, M. S., Esler, A., Furnier, S. M., Hallas, L., Hall-Lande, J., Hudson, A., Hughes, M. M., Patrick, M., Pierce, M., Poynter, J. N., Salinas, A., Shenouda, J., Vehorn, A., Warren, Z., Constantino, J. N., … Cogswell, M. E. (2021). Prevalence and characteristics of autism spectrum disorder among children aged 8 years—Autism and Developmental Disabilities Monitoring Network, 11 sites, United States, 2018. *Morbidity and Mortality Weekly Report (MMWR) Surveillance Summaries, 70*(11), 1–20.

McIlwain, L.F., & Fournier W. (2017). *Mortality & risk in ASD wandering/elopement 2011–2016*. Retrieved from https://nationalautismassociation.org/wpcontent/uploads/2017/04/NAAMortalityRiskASDElopement.pdf.

Modell, S. J., & Mak, S. (2008). A preliminary assessment of police officers' knowledge and perceptions of persons with disabilities. *Intellectual and Developmental Disabilities, 46*, 183–189. https://doi.org/10.1352/2008.46:183-189

Pereira-Smith, S., Boan, A., Carpenter, L. A., Macias, M., & LaRosa, A. (2019). Preventing elopement in children with autism spectrum disorder. *Autism Research, 12*(7), 1139–1146.

Rabe-Hemp, C. E. (2008). Female officers and the ethic of care: Does officer gender impact police behaviors? *Journal of Criminal Justice, 36*(5), 426–434.

Railey, K. S., Bowers-Campbell, J., Love, A. M., & Campbell, J. M. (2020). An exploration of law enforcement officers' training needs and interactions with individuals with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 50*(1), 101–117.

Rava, J., Shattuck, P., Rast, J., & Roux, A. (2017). The prevalence and correlates of involvement in the criminal justice system among youth on the autism spectrum. *Journal of Autism and Developmental Disorders, 37*(2), 340–346. https://doi.org/10.1007/s10803-016-2958-3

Reeves, M. (2019, June 11). *A deputy taunted an autistic student. Now the boy's dad is suing Pinellas schools and sheriff*. Retrieved from https://www.tampabay.com/blogs/gradebook/2019/06/11/a-deputy-taunted-an-autistic-student-now-the-boys-dad-is-suing-pinellas-schools-and-sheriff/.

Salerno, A. C., & Schuller, R. A. (2019). A mixed-methods study of police experiences of adults with autism spectrum disorder in Canada. *International Journal of Law and Psychiatry, 64*, 18–25.

Schuck, A. M., & Rabe-Hemp, C. (2007). Women police: The use of force by and against female officers. *Women & Criminal Justice, 16*(4), 91–117. https://doi.org/10.1300/J012v16n04_05

Shea, L. L., Cooper, D., & Wilson, A. B. (2021). Preventing and improving interactions between autistic individuals and the criminal justice system: a roadmap for research. *Autism Research, 14*(10), 2053–2060.

Shrout, P. E. (1998). Measurement reliability and agreement in psychiatry. *Statistical Methods in Medical Research, 7*, 301–317.

Simpson, R., & Croft, A. (2021). Seeing gender in policing: Uniforms and perceived aggression. *Women & Criminal Justice, 31*(5), 406–421.

Tint, A., Palucka, A. M., Bradley, E., Weiss, J. A., & Lunsky, Y. (2017). Correlates of police involvement among adolescents and adults with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 47*(9), 2639–2647.

Turcotte, P., Shea, L. L., & Mandell, D. (2018). School discipline, hospitalization, and police contact overlap among individuals with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 48*(3), 883–891. https://doi.org/10.1007/s10803-017-3359-y

Wallace, D., Herbert, J., Tyler, D., & McGee-Hassrick, E. (2021). Interactions between Individuals on the Autism Spectrum and the Police: The Fears of Parents, Caregivers, and Professionals. *Policing A Journal of Policy and Practice, 15*(2), 950–964.

Wood, J. D., & Watson, A. C. (2017). Improving police interventions during mental health-related encounters: Past, present and future. *Policing and Society, 27*(3), 289–299.

Yu, H. H., & Viswanath, S. (2022). Women in state law enforcement: An exploratory trend analysis. *The American Review of Public Administration, 52*(4), 268–279.

BRIEF REPORT

Brief Report: Descriptive Analysis of Law Enforcement Officers' Experiences with and Knowledge of Autism

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Abstract

Individuals with Autism Spectrum Disorder (ASD) may interact with law enforcement officers (LEOs) as victims of crime, witnesses to crime, or suspects of crime. Interactions between LEOs and those with ASD may go awry which raises questions about levels of training, experiences, and knowledge acquired by LEOs. Seventy-two LEOs reported on their experiences and training related to ASD and completed a survey of autism knowledge. The majority (72.2%) of LEOs reported no formal training for interacting with individuals with ASD. For LEOs responding to calls involving ASD, officers with prior training reported better preparation. Officers' responses to the knowledge survey varied considerably. Results support the need for formalized training in ASD for LEOs.

Keywords Autism spectrum disorder · Law enforcement · Experiences · Training · Knowledge

The core symptoms of Autism Spectrum Disorder (ASD) include impairments in social communication and interaction, and restricted and repetitive patterns of behaviors. Restricted, repetitive behaviors may include stereotyped movements, insistence on sameness, fixated interests, and hyper- or hyporeactivity to sensory input (American Psychiatric Association 2013). These core symptoms are likely to affect the way persons with ASD interact with others, including law enforcement officers (LEOs). The increased reported prevalence of ASD, which is now estimated at 1 in 59 (Baio et al. 2018), results in an increased likelihood that LEOs will interact with persons who have been diagnosed with ASD.

Although public awareness campaigns and professional standards have targeted improving knowledge and practice of LEOs related to ASD, it is not clear how well information about ASD is disseminated and incorporated in LEOs' training. It is likely that LEOs would benefit from training specific to the social communication deficits and restricted repetitive behaviors associated with ASD prior to responding to calls that involve individuals with ASD who may present as victims, witnesses, or suspects. Lack of knowledge of ASD may result in LEOs misinterpreting ASD specific behavior as noncompliant, threatening, disorderly, or suspicious.

Research on law enforcement training and disability awareness is limited; however, previous findings indicate that the majority of LEOs have little training or expertise regarding disabilities (Eadens et al. 2016). Of the limited studies available, few have examined LEO training specific to ASD. Laan, Ingram, and Glidden (2013) conducted interviews with LEO training coordinators in seven states, and compared LEO training materials related to recommendations for training on ASD and guidelines for training on other mental health disorders. Results indicated that most officers received between 400 and 770 h of total training at the basic recruit levels, of which only 3–12 h were focused on mental health disorders. Furthermore, authors highlighted that autism is not a mental disorder, and therefore warrants instruction tailored specifically to ASD. An analysis of training content determined that training specific to autism, with the exception of one state, was very limited. Although some states, such as Florida, have now mandated training for LEOs that requires recognition of symptoms and characteristics of ASD, and appropriate responses to a person exhibiting such symptoms, there are no guidelines

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regarding the content, format, or amount of time this specialized training entails. Teagardin et al. (2012) provided ASD-related training to police officers via video. Officers who participated in the training outperformed officers who did not receive training on a measure of ASD-related knowledge; however, neither group demonstrated mastery of training material. The authors concluded that video training is likely insufficient to train officers on how to assess and respond to individuals with ASD. Instead, authors recommended role-play, hands-on activities, and in-vivo training to supplement video training. As a vulnerable population within our society, a growing awareness of ASD by LEOs is warranted; however, LEOs' experiences with and knowledge of ASD remains an under-researched area.

There are various situations in which LEOs may interact with persons with ASD. First, persons with ASD may be crime victims. Previous research documents that persons with developmental delays, including those with ASD, are at increased risk for abuse and victimization (Petersilia 2001). In some instances, interactions between LEOs and individuals with ASD may be as a result of co-occurring psychiatric or medical concerns (Tint et al. 2017). Persons with ASD may also be witnesses or suspects of a crime. Additional instances that may result in LEOs interacting with persons with ASD include elopement, sensory over-stimulation, and behavioral difficulties, such as aggression, yelling, and self-injury. Using a nationally representative sample of adolescents and young adults with ASD, Rava et al. (2017) found that by age 21 approximately 20% had been stopped by the police for questioning, and almost 5% had been arrested. Rava et al. (2017) also found that individuals with ASD who display externalizing behaviors are more likely to be involved in the criminal justice system. Previous research offers conflicting findings as to whether children and young adults with ASD are at higher risk for involvement with the criminal justice system than the general population; however, it appears likely based on existing research that people with ASD are somewhat over-represented in the criminal justice system (King and Murphy 2014). Further investigation into the prevalence and types of offences committed by individuals with ASD is needed.

The present investigation occurred within the context of recently approved state legislation. The Florida senate passed a bill which took effect October 1, 2017 requiring the Florida Department of Law Enforcement to establish a continued employment training component for LEOs specific to ASD. The training component was required to include recognition of symptoms and characteristics of ASD, and appropriate responses to a person exhibiting such symptoms. In response to the senate bill, we designed a survey to document LEOs' knowledge about ASD to guide future training efforts. The purpose of the present study was to conduct an exploratory and descriptive survey of a sample of LEOs from the police and sheriff departments in the Tampa Bay area of the state of Florida in order to describe LEOs' knowledge of ASD, prior training in the area of ASD, interactions with individuals with ASD while on duty, and circumstances and outcomes from professional calls.

Methods

Participants

The first author surveyed LEOs prior to an introductory training on ASD sponsored by the first author's agency. LEOs were informed about the purpose of the survey and asked if they wished to complete the survey prior to the training; informed consent was secured for all LEOs ($N = 72$). LEOs were 56.9% male with a mean age of 42.2 years ($SD = 9.5$) and 15.0 years of law enforcement experience ($SD = 9.2$; see Table 1). Study procedures were approved by the first author's Institutional Review Board.

Measures

To evaluate LEOs' prior knowledge of, and experience with ASD, participants completed a questionnaire that included (a) a demographic survey, (b) a 15-item autism knowledge questionnaire, and (c) prior law enforcement experiences interacting with individuals with ASD. The 15-item autism knowledge questionnaire reflects an update of Stone's (1987) survey, which has been adapted by Heidgerken et al. (2005), and modified by Tipton and Blacher (2014). The questionnaire consists of 15 statements with a 5-point Likert-type response scale (see Table 3 for items). Seven of 15 items were recoded such that greater disagreement was associated with greater knowledge (e.g., Item 3, "There is a cure for autism"). Two items did not correlate with total scores and were omitted from the total score calculation resulting in Cronbach's $\alpha = .66$ and Mdn item-total correlation $= .43$ for the 13-item total knowledge scale.

Results

Most LEOs reported some type of prior relationship with an individual with ASD ($n = 44$; 61.1%) and approximately half ($n = 35$) reported responding to a call involving an individual with ASD in the past 12 months (see Table 2). However, roughly three-quarters (72.2%) of the sample had not completed training related to interacting with individuals with ASD. For LEOs responding to calls involving individuals with ASD, those with training were more likely to report feeling adequately prepared to respond to the call, $\chi^2 (1, N = 34) = 12.88$, $p < .01$. Compared to LEOs

Table 1 Participant characteristics and experiences with autism spectrum disorder (N=72)

Variable	n	%	Min	Max	M	SD
Gender						
Male	41	56.9				
Female	30	41.7				
Missing	1	1.4				
Do you have a relationship with someone with autism? If "Yes," what is relationship?						
No	28	38.9				
Friend	16	22.2				
Immediate family	11	15.3				
Other	8	11.1				
Extended family	7	9.7				
Missing	2	2.8				
Have you participated in training for interacting with individuals with autism?						
Yes	20	27.8				
No	52	72.2				
Number of years of law enforcement experience			1.00	37.00	15.02	9.22
Age (year)			23.00	61.00	42.17	9.53

Table 2 Characteristics of police calls involving individuals with autism spectrum disorder (N=72)

Variable	n	%	Min	Max	M	SD
How many calls have you had that involved someone with autism over the past 12 months?						
None	36	50.0				
One or more	35	48.6				
Missing	1	1.4				
For respondents reporting calls within the past 12 months (n=35)						
Number of calls over the past 12 months			1.00	12.00	3.53	2.7
Approximate age of individual with autism			5.00	30.00	12.93	5.3
Was the individual able to use words to effectively communicate with you?						
Yes	24	68.6				
No	11	31.4				
Did you use physical force to subdue the person with autism?						
Yes	5	14.3				
No	30	85.7				
Was the person placed in handcuffs?						
Yes	8	22.9				
No	27	77.1				
Did the situation result in an involuntary hospitalization of the person?						
Yes	9	25.0				
No	27	75.0				
Did you feel that you were well trained or adequately prepared for this call?						
Yes	17	48.6				
No	18	51.4				

without training, however, those with prior training were equally likely to: (a) use physical force during the call, χ^2 (1, $N=34$) $=1.57$, $p=.21$, (b) use handcuffs, χ^2 (1, $N=34$) $=0.02$, $p=.88$, and (c) have the call end in evaluation for involuntary hospitalization, χ^2 (1, $N=34$) $=2.20$, $p=.14$. There were also no relationships between LEO's feelings of preparedness and the likelihood of: (a) using physical force during the call, χ^2 (1, $N=34$) $=0.23$, $p=.63$, (b) using

Table 3 Knowledge of autism item statistics (N = 72)

Item	M	SD
1. Autism is an emotional disorder	2.61	1.2
2. Vaccines are causing an increase in autism	2.43	1.0
3. There is a cure for autism	2.03	0.8
4. Autism runs in families	2.94	0.8
5. All children with autism display poor eye contact	2.88	1.0
6. Autism is diagnosed more frequently in males than females		
7. Changing a child's diet will lessen the severity of autism symptoms	2.99	0.9
8. There is one intervention that works for all children with autism	1.76	0.8
9. Children with autism can grow up to live independently	4.03	0.7
10. Autism is a neurodevelopmental disorder	3.90	0.6
11. Autism can be diagnosed as young as 18 months	3.67	0.7
12. Children with autism are smarter than standardized tests demonstrate	3.68	0.7
13. It is important that all children with autism receive special education	3.76	1.0
14. With proper treatment, most children with autism will eventually outgrow it	2.24	0.8
15. Several disorders that commonly co-occur with autism are depression, anxiety, ADHD, intellectual disability, and language disorder	3.89	0.6
Total Score[a]	47.88	4.6

Item responses range from 1 = "Definitely Disagree," to 5 = "Definitely Agree"

[a]Total Score calculated from 13 items (Items 4 and 13 omitted); items 1, 2, 3, 5, 7, 8, and 14 reverse scored

handcuffs during the call, χ^2 (1, N = 34) = 0.65, p = .42, or (c) the call involving evaluation for involuntary hospitalization, χ^2 (1, N = 34) = 0.14, p = .68.

Descriptive information for all 15 ASD knowledge survey items are presented in Table 3 and several deserve mention. On average, LEOs *disagreed* that there is a "cure" for ASD, that most children will 'outgrow' ASD, and that a single intervention works for all children with ASD. On average, LEOs *agreed* that ASD is a neurodevelopmental disorder, that children with ASD can grow to live independently and that various disorders co-occur with ASD. LEOs with (n = 17; M = 49.18; SD = 4.92) and without training (n = 50; M = 47.44; SD = 4.47) did not differ on total knowledge scores, F_{Welch} (1, 26) = 1.65, p = .21. Likewise, LEOs with (n = 41; M = 48.00; SD = 4.69) and without relationship with someone with ASD (n = 26; M = 47.69; SD = 4.59) did not differ on total knowledge scores, F_{Welch} (1, 54) = 0.07, p = .79.

Discussion

Given the need for LEOs to recognize of symptoms and characteristics of ASD and respond appropriately to individuals exhibiting such symptoms, improved knowledge of and training related to ASD by LEOs is necessary. However, the perceptions of LEOs regarding persons with ASD remains an under-researched area. We sought to contribute to the knowledge base regarding LEOs' experiences with individuals with ASD by analyzing survey responses of knowledge of ASD, as well as gathering information about personal and professional experiences with individuals with ASD.

Review of Main Findings

Roughly 60% of LEOs reported having a relationship with an individual with ASD, such as an immediate or extended family member or friend/acquaintance. Almost three-quarters of LEOs reported no prior training for working with individuals with ASD, yet about half responded to a call involving an individual with ASD over the past 12 months. For individuals responding to calls, most had not received training for working with individuals with ASD; individuals who received prior training were more likely to report feeling adequately prepared to respond to the call. LEOs were equally likely to use physical force and handcuffs regardless of whether or not training was completed. Likewise, there were no relationships between LEOs' feelings of preparedness and use of force, use of handcuffs, or the call resulting in evaluation for involuntary hospitalization. Our findings correspond with prior work documenting LEOs' simultaneous reports of feeling prepared to respond to calls yet needing further training (Modell and Mak 2008). Knowledge of ASD did not differ whether or not LEOs had completed prior training about ASD, and knowledge of ASD did not differ whether or not LEOs reported having a relationship with an individual with ASD.

Implications

Findings from the current study indicate that the majority of LEOs have not received training specific to autism, although almost half have responded to calls on duty involving individuals with autism within the last year. Of those who responded to calls, LEOs who had previously received autism specific training reported feeling better prepared. It should be noted that of LEOs who responded to calls, 25% reported the outcome involved the individual with ASD being taken to a receiving facility for involuntary psychiatric examination. Further research is warranted to determine if the findings from this initial small sample are representative of outcomes in a larger sample of LEOs. Additional research is needed to determine if involuntary hospitalization is the result of deficits in adequate training for LEOs related to ASD, or if this outcome is preferable to placing these individuals in police custody. Given the increase in reported prevalence of ASD, LEOs are likely to interact with individuals with ASD within their professional role. Some states are now requiring autism specific training for first responders to assure LEOs are better prepared to recognize the signs and symptoms of autism, and respond appropriately. The realities of LEO training requirements, such as tactical training, result in practical challenges regarding how best to deliver ASD-related training. For example, ASD-related training might be delivered and well-received through integration into other LEO training. The results of the present study support the need for formalized training in ASD for LEOs as awareness and knowledge of ASD was reported to result in officers feeling better equipped to respond to calls involving individuals with ASD.

Limitations

The present study included an exploratory and descriptive survey regarding awareness of autism and professional interactions/incidents with individuals on the spectrum for a small number of LEOs seeking autism specific law enforcement training. Thus, participants were LEOs who voluntarily participated in this training. It may be that individuals who sought this training opportunity to learn more about ASD may not be representative of the broader LEO population regarding prior experience, personally and professionally, with individuals with ASD.

Participants in the present study included LEOs from the sheriff and police departments in the Tampa Bay area, however, information regarding the specific territory and time that the LEOs patrol was not collected from participants. Such information would be helpful for understanding the generalizability of the outcomes of the present study.

Directions for Future Research

The perceptions of LEOs regarding persons with ASD remains understudied. Additional research is needed to determine what content is most pertinent when providing training for LEOs related to autism. Our survey focused largely on general knowledge of ASD to document targets for future training; however, extending surveys to include specific strategies in response to calls is needed. For instance, more information is needed regarding the types of calls LEOs receive regarding individuals with ASD (e.g., elopement) and LEOs responses to assure that training programs provide practical information for LEOs. In addition, it would be useful to determine if LEOs who have participated in entry level training on ASD benefit from more advanced trainings to facilitate higher mastery of content and if such training facilitates changes in outcomes from calls (e.g., use of force, handcuffs). In addition, another under-researched area is the perceptions of individuals with ASD regarding LEOs.

Conclusions

Research on law enforcement training and disability awareness is limited; however, previous findings indicate that the majority of LEOs have little training or expertise regarding disabilities (Eadens et al. 2016). Findings from the current study support previous research findings and indicated that the majority of LEOs had not received training specific to autism. Knowledge of signs and symptoms of ASD, as well as how training related to managing calls for individuals with ASD is imperative as almost half of the participants in the present study had responded to calls on duty involving individuals with autism within the last year. Participants who had previously received autism specific training reported feeling better prepared. As the reported prevalence rate of ASD increases, LEOs are increasingly more likely to interact with individuals with ASD within their professional role. The results of the present study support the need for formalized training in ASD for law enforcement officers as awareness and knowledge of ASD was reported to result in officers feeling better equipped to respond to calls involving individuals with ASD. Further research into the determination of appropriate training content as well as the perceptions of individuals with ASD regarding interactions with LEOs is warranted.

Compliance with Ethical Standards

Conflict of interest All the author declares that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th edn.). Washington, DC: American Psychiatric Association.

Baio, J., Wiggins, L., Christensen, D. L., Maenner, M. J., Daniels, J., Warren, Z., & Dowling, N. F. (2018). Prevalence of autism spectrum disorder among children aged 8 years—autism and developmental disabilities monitoring network, 11 sites, United States, 2014. *MMWR Surveillance Summaries, 67*(6), 1–23. https://doi.org/10.15585/mmwr.ss6706a1.

Eadens, D. M., Cranston-Gingras, A., Dupoux, E., & Eadens, D. W. (2016). Police officer perspectives on intellectual disability. *Policing: An International Journal of Police Strategies & Management, 39*, 222–235.

Heidgerken, A. D., Geffken, G., Modi, A., & Frakey, L. (2005). A survey of autism knowledge in a health care setting. *Journal of Autism and Developmental Disorders, 35*, 323–330. https://doi.org/10.1007/s10803-005-3298-x.

King, C., & Murphy, G. H. (2014). A systematic review of people with autism spectrum disorder and the criminal justice system. *Journal of Autism and Developmental Disorders, 44*, 2717–2733. https://doi.org/10.1007/s10803-014-2046-5.

Laan, J. M., Ingram, R. V., & Glidden, M. D. (2013). Law enforcement training on mental disorders and autism spectrum disorders in the southeastern United States. *Journal of Global Intelligence & Policy, 6*(10), 51–67.

Modell, S. J., & Mak, S. (2008). A preliminary assessment of police officers' knowledge and perceptions of persons with disabilities. *Intellectual and Developmental Disabilities, 46*, 183–189. https://doi.org/10.1352/2008.46.

Petersilia, J. R. (2001). Crime victims with developmental disabilities: A review essay. *Criminal Justice and Behavior, 28*, 655–694. https://doi.org/10.1177/009385480102800601.

Rava, J., Shattuck, P., Rast, J., & Roux, A. (2017). The prevalence and correlates of involvement in the criminal justice system among youth on the autism spectrum. *Journal of Autism and Developmental Disorders, 47*, 340–346. https://doi.org/10.1007/s10803-016-2958-3.

Stone, W. L. (1987). Cross-disciplinary perspectives on autism. *Journal of Pediatric Psychology, 12*, 615–630.

Teagardin, J., Dixon, D. R., Smith, M. N., & Granpeesheh, D. (2012). Randomized trial of law enforcement training on autism spectrum disorders. *Research in Autism Spectrum Disorders, 6*, 1113–1118. https://doi.org/10.1016/j.rasd.2012.02.002.

Tint, A., Palucka, A. M., Bradley, E., Weiss, J. A., & Lunsky, Y. (2017). Correlates of police involvement among adolescents and adults with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 47*, 2639–2647. https://doi.org/10.1007/s10803-017-3182-5.

Tipton, L. A., & Blacher, J. (2014). Brief report: Autism awareness: Views from a campus community. *Journal of Autism and Developmental Disorders, 44*, 477–483. https://doi.org/10.1007/s10803-013-1893-9.

Law Enforcement Officers: A Call for Training and Awareness of Disabilities

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Abstract

Law enforcement officers (LEOs) are likely to encounter people with disabilities (PWD) during calls for service. These interactions sometimes escalate situations involving PWD and may result in arrest or death due to a lack of disability awareness among LEOs. The purpose of this study was to explore the current perspectives of LEOs regarding PWD and to identify the current training needs of LEOs regarding disability awareness and interactions with PWD. This study utilized two focus groups, consisting of participants representing seven law enforcement agencies across a large, Western state. Results indicate that the perceptions and needs of the LEOs regarding PWD are shaped by four themes: (a) personal connections, (b) job experience, (c) training opportunities, and (d) training needs. Implications for policy and practice to enhance the rigor of disability awareness training for LEOs are described.

Recently, fatal interactions between law enforcement officers (LEOs) and individuals with disabilities have attracted media attention (Perry & Carter-Long, 2016; Saleh et al., 2018; Viljoen et al., 2017). People with disabilities (PWD) account for approximately one third of all people killed in interactions with LEOs, many of whom have a developmental, intellectual, or psychiatric disability (Perry & Carter-Long, 2016). Saleh et al. (2018) analyzed media coverage of civilian deaths ($n = 1,099$) in interactions with LEOs in 2015 and found that 23% ($n = 251$) of individuals killed in these interactions had a mental illness. People with disabilities also have a high cumulative probability of arrest ($c = 42.65$) by age 28 years compared with people without disabilities ($c = 29.68$; McCauley, 2017). Among Black PWD, the risk was even higher ($c = 55.17$; McCauley, 2017).

In addition to the higher probability of arrest, between 2009 and 2015, PWD were victims of crimes at 2.5 times the rate of people without disabilities (Bureau of Justice Statistics, 2017). In addition, 20% of victims with disabilities believed they were targeted because of their disability (Bureau of Justice Statistics, 2017). Unfortunately, many law enforcement agencies are unprepared to support victims with disabilities. In a survey of 133 law enforcement departments, only 21% of departments had a protocol for identifying disability and 37% had protocols for providing accommodations to victims with disabilities (Oschwald et al., 2011).

Because of the higher rates of victimization of PWD and because of the higher levels of fatalities in interactions

between PWD and LEOs, disability advocates and researchers have called for justice and change for PWD in the criminal justice system (The Arc, n.d.; McCauley, 2017; Saleh et al., 2018), beginning with better training of LEOs (The Arc, n.d.; Diamond & Hogue, 2021; Eadens et al., 2016; Engelman et al., 2013; Modell & Mak, 2008; Oschwald et al., 2011) and school resource officers (Chan et al., 2019, 2021). Traditionally, prospective LEOs receive extensive basic academy classroom training followed by field training supervised by a veteran officer (Belur et al., 2019; Dulin et al., 2020; McGinley et al., 2019). Following the initial classroom and field training, LEOs attend several mandatory trainings as well as optional in-service trainings (Diamond & Hogue, 2021). Diamond & Hogue (2021) examined the training websites for state law enforcement agencies to understand which states offered optional or mandatory disability awareness trainings. Only seven states required general disability awareness trainings, and one state offered optional disability awareness training. The most frequently discussed training regarding disabilities was Crisis Intervention Training (i.e., mandatory = 18 states, optional = seven states), a training designed to facilitate positive interactions with people with mental illness.

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The second most frequent kind of training was developmental and/or intellectual disability (ID) trainings (i.e., mandatory = 11 states, optional = three states), followed by trainings about autism (i.e., mandatory = five states, optional = three states), the Americans with Disabilities Act (i.e., mandatory = five states, optional = three states), and physical disabilities (i.e., mandatory = four states; Diamond & Hogue, 2021).

Research has shown that disability awareness trainings can have a positive impact on LEOs' perceptions of PWD (Bailey et al., 2001; Engelman et al., 2013). In a study of trainee LEOs in the United Kingdom, Bailey et al. (2001) conducted a role-playing exercise that was designed to raise awareness of people with intellectual disabilities. The researchers found that those who participated in the disability awareness training significantly improved their perceptions of people with intellectual disabilities, whereas there was no change in the perceptions of the control group (Bailey et al., 2001). Engelman et al. (2013), through focus group interviews and surveys, analyzed the perceptions of LEOs who participated in a 2-hr training designed to facilitate a better response to domestic violence calls involving people who are deaf/hard of hearing. The participants perceived that they gained knowledge of the communication skills they needed and improved their self-efficacy and cultural competency (Engelman et al., 2013).

To better understand training needs, some researchers have examined LEOs' perceptions and awareness of disabilities (e.g., Bezyak et al., 2019; Modell & Mak, 2008), whereas other researchers focused on specific disabilities such as intellectual disabilities (e.g., Eadens et al., 2016; Henshaw & Thomas, 2012), learning disabilities (e.g., Gendle & Woodhams, 2005), or autism (e.g., Chown, 2010; Gardner et al., 2019). LEOs' perspectives regarding disabilities come from a variety of sources. Of the 72 LEOs in Florida surveyed by Gardner et al. (2019), 61.1% had a prior relationship with someone with autism, and 48.6% had a call for service with someone with autism in the previous year. Law enforcement officers in another study were most likely to report that their knowledge of intellectual disabilities was based on work experience, followed by training (Henshaw & Thomas, 2012). The LEOs explained that they were more comfortable working with people with intellectual disabilities when that person was an offender than when they were the witness (Henshaw & Thomas, 2012).

There is some preliminary evidence indicating that LEOs of certain demographic groups may have more positive views toward PWD. In a study of 188 LEOs in the Southeastern United States, Eadens et al. (2016) used a Social Distance Questionnaire (Haring et al., 1983) to analyze LEOs' perceptions of people with intellectual disabilities. The researchers found that female LEOs had significantly greater positive attitudes toward people with intellectual disabilities than male LEOs although the number of females in the sample was small. In addition, White LEOs had more knowledge about intellectual disabilities than LEOs of minority backgrounds; however, the LEOs of minority backgrounds had significantly greater positive attitudes, although their number in the sample was small. Law enforcement officers with more years of experience tended to have higher but not significantly different scores than those with fewer years of experience (Eadens et al., 2016).

Law enforcement officers in some studies stated that they had received little to no training regarding autism (Gardner et al., 2019), intellectual disabilities (Eadens et al., 2016), or disabilities in general (Modell & Mak, 2008). Those who had received training felt that they were more prepared for interactions with PWD (Gardner et al., 2019; Henshaw & Thomas, 2012). However, Gardner et al. (2019) found there was no difference in the number of use of force incidents in interactions with PWD between LEOs who had received disability awareness training and those who had not.

Law enforcement officers identified several difficulties when interacting with PWD. Some LEOs perceived that communication could be a challenge when interacting with PWD (Bezyak et al., 2019; Henshaw & Thomas, 2012), making communication and other interpersonal skills key to successful interactions with PWD (Bezyak et al., 2019). Other difficulties mentioned by LEOs in the focus groups conducted by Bezyak et al. (2019) were complex responsibilities, such as not only creating a safe situation but also determining what happened and why. Another challenge is distinguishing between mental illness and learning disabilities (Gendle & Woodhams, 2005), intellectual disabilities (Eadens et al., 2016), or autism (Gardner et al., 2019; Modell & Mak, 2008).

Although there is preliminary research into LEOs' perceptions of PWD, most studies used survey methods with closed-end questions (Gardner et al., 2019) or both closed- and open-ended questions (Chown, 2010; Eadens et al., 2016; Henshaw & Thomas, 2012; Modell & Mak, 2008). One study held interviews with LEOs (Gendle & Woodhams, 2005) and one conducted focus groups (Bezyak et al., 2019). Whereas these studies focused on LEOs' perceptions and experiences with PWD, only three studies asked participants to provide feedback on their training needs regarding PWD (Bezyak et al., 2019; Chown, 2010; Modell & Mak, 2008), and Chown (2010) and Modell and Mak (2008) used content analysis rather than interviews or focus groups to solicit this information. Research into LEOs' perceptions of PWD and training needs regarding PWD is "understudied" (Gardner et al., 2019, p. 1282) and more research is needed in this area using qualitative methods (Bezyak et al., 2019; Eadens et al., 2016). Because of the need for more research, the purpose of this study was to explore the

Table 1. Participants' Demographic Information.

Pseudonym	Gender	Race, ethnicity	Age range in years	Years of experience	Current rank	Educational background
Rod	Male	White, not Hispanic	55–60	30	Detective	Bachelor's degree
Alan	Male	White, not Hispanic	46–50	26	Police officer	Some college, no degree
Brandon	Male	White, not Hispanic	35–39	13	Deputy	Bachelor's degree
Mike[a]	Male	White, not Hispanic	25–29	6	State trooper	Bachelor's degree
Frankie	Male	White, not Hispanic	35–39	16	Detective	Bachelor's degree
Daniel	Male	White, not Hispanic	35–39	11.5	Sergeant	Associate's degree
Mario	Male	Two or more races, Hispanic	46–50	24	Lieutenant	Some college, no degree
Crystal	Female	White, not Hispanic	35–39	14.5	State trooper	Associate's degree
Nick	Male	Two or more races, not Hispanic	35–39	18	State trooper	Some college, no degree
Kyle	Male	White, not Hispanic	30–34	5	Police officer	Associate's degree
Lina	Female	White, not Hispanic	30–34	1	Police officer	Associate's degree
Jordan	Male	White, not Hispanic	46–50	23	Police officer II	Some college, no degree
Scott	Male	White, not Hispanic	50–54	16	Lieutenant	Master's degree

[a]Participant worked in a rural location.

perceptions and training needs of LEOs regarding disability awareness. The following research questions guided this study:

Research Question 1 (RQ1): What are the current perspectives of LEOs regarding PWD?
Research Question 2 (RQ2): What are the current training needs of LEOs regarding awareness and interactions with PWD?

Method

Two focus groups were conducted with LEOs from seven law enforcement agencies located across one large Western State.

Participant Recruitment

Following university institutional review board (IRB) approval, the lead researcher emailed the heads of law enforcement agencies to recruit participants. Contact names and emails for each agency were obtained from the law enforcement agency's website. A total of 10 law enforcement agencies were contacted. Three agencies did not respond to the email invitation. Seven agencies agreed to participate, namely, the state highway patrol agency, two university police departments, three urban police departments, and one sheriff's department. The heads of law enforcement agencies who agreed to participate assigned a point of contact for the researcher to communicate with regard to recruitment. The points of contact for each agency then provided the name and contact information of potential participants. Each potential participant was individually contacted through email and invited to participate in the study. After reviewing a

description of the study and agreeing to participate, each LEO was provided with a date and location of the focus group in their area. Participants received a US$25 gift card for their participation in the study.

Participants. A total of 13 LEOs from seven law enforcement agencies participated in this study, with one participant from a rural location and 12 from urban locations (see Table 1). Participants were representative of multiple ranks and agencies (e.g., Urban Police, Highway Patrol, Sherriff's Office, and University Police). Specifically, the participants represented the rank of officer ($n = 7$), detective ($n = 2$), sergeant ($n = 1$), deputy ($n = 1$), and lieutenant ($n = 2$). The average years of experience among the participants was 15.69 years, with a standard deviation of 8.6.

Data Collection

The first focus group was held at the Northern Command Office of the Highway Patrol and the second focus group was conducted at the Southern Command Office of the Highway Patrol. These two locations were selected as central locations to provide convenient access for urban and rural LEOs from a variety of agencies.

Each focus group followed a semi-structured format and consisted of eight questions. To develop the questions, the second researcher searched the literature for measures related to disability awareness among LEOs. Several studies used closed-end survey questions to gather information about participants' perceptions of disabilities (e.g., Antonak, 1980, 1982; Antonak et al., 1993; Antonak & Harth, 1994; Dillenburger et al., 2017; Rosenbaum et al., 1987; Yuker & Block, 1986). These scales were not appropriate for the purpose of this study as they were not geared toward the

perspectives of LEOs. Modell and Mak (2008) surveyed LEOs in Northern California about their perceptions of PWD, using 10 open-end questions developed by the researchers. These questions were also modified and used by Chown (2010) in a study designed to explore the experiences of police officers in the United Kingdom during interactions with people with autism. Based on this review, the researchers selected six questions from Modell and Mak (2008) and Chown (2010) that addressed the first research question about the participants' perspectives of PWD; one question about the participants' training needs was added to the questions to address the second research question. The wording of these questions was modified to meet the goals of the study and to use more current terminology. An eighth question was added offering the participants a final opportunity to share their thoughts regarding PWD.

After determining the questions, the researchers organized them into four sets. The first set of questions was designed to ascertain the background experiences that each participant had with PWD (e.g., child, sibling, and friend) and the differences that each participant saw (if any) between cognitive, physical, and mental health. The second group of questions focused on determining each participant's ideas about PWD. Specifically, when involved in crimes is the PWD typically the victim or offender? What is the level of comfort felt by an officer when interacting with PWD? The third group of questions focused on learning more about the training that LEOs received and what type of training they would like to see regarding disabilities. Participants were asked to recall and describe any past training received, either on the topic of disabilities from their agencies or other outside organizations. Finally, the participants were asked whether they felt that a disability awareness training would be helpful. If so, what type or structure of training would they like to see implemented? See the appendix for the full interview protocol.

At the beginning of each focus group, the first researcher described the study and provided the consent form. After each participant provided written consent, they were asked to complete a short demographics form. Next, the focus group began with each participant introducing themselves and sharing their current rank and years of experience. Following introductions, the first researcher led the focus group through the eight questions. The second researcher took notes. The participants took turns answering each question, and then some of the participants added comments based on the initial answers to each question. It is important to note that Question 3 on the interview protocol asks participants to describe what they think when they hear the term autism. However, this question was not directly asked during each focus group because the participants' addressed this question when responding to Questions 1 and 2.

The focus group interviews were recorded onto the second researcher's cell phone. These recordings were uploaded to a secure server and then deleted from the phone. The second researcher transcribed each focus group interview and uploaded the transcripts to the secure server.

Data Coding and Analysis

The data were analyzed using thematic analysis (Rossman & Rallis, 2017). To begin the data analysis process, each researcher independently read each transcript 3 times to familiarize themselves with the data (Given, 2008). Once familiar with the data, each researcher coded the data at the phrase level. In this step, the researchers separately examined and named specific elements in the data through memo writing (Johnson & Christensen, 2017). Next, guided by their thematic memos, the researchers worked together to collapse the codes into themes and develop a conceptual framework for the data (Johnson & Christensen, 2017). For example, the codes of community involvement and friends/family members with disabilities were collapsed into the theme of personal connections. Although common codes were generated and similar perceptions of the data were evident, slight discrepancies occurred. When these discrepancies occurred between the researchers, transcripts and memos were reviewed and discussed to reach consensus.

Credibility Measures

We used trustworthiness measures to ensure credibility and reliability of our data (Johnson & Christensen, 2017). For our first credibility measure, a colleague independently reviewed transcripts, codes, themes, and conceptual framework. The colleague agreed with the finalized themes, namely, personal connections, job experience, training opportunities, and training needs. For our second credibility measure, we used purposeful sampling to select participants from each focus group to review our "Method" and "Results" sections. We chose participants who contributed rich information to the study. Each of the three participants who member checked the "Method" and "Results" sections agreed with the finalized themes.

Results

The qualitative data analysis led to the development of a conceptual framework that indicates that the perceptions of the LEOs regarding PWD are shaped by four main themes: (a) personal connections, (b) job experience, (c) training opportunities, and (d) training needs.

Current Perspectives of LEOs

The first research question sought to determine the current perspectives of LEOs regarding PWD. The themes that

emerged to address this question were personal connections and job experience.

Personal connections. The first theme, personal connections, relates to the background and history that one might have toward or about PWD. The participants across both focus groups indicated that interactions with PWD through friends and family informed their current perspectives. For example, several participants have family members with autism. Scott described his son as having "Very high functioning Asperger syndrome. Very little training, very little help from anybody along the way. We just kind of learned as we went, as a parent." Frankie's wife's cousin has autism. "She is older than me and I think she has the mental capacity of a 7- to 9-year-old." Frankie explained that most of his experience with autism comes from interacting with this family member. Mike has frequently interacted with his fiancée's brother, who has autism. "He's going to probably come live with us, to help out their parents and whatnot. For me, I've dealt with people with autism probably more so than any of the other disabilities."

Similarly, several participants explained that they learned about PWD through friends and coworkers. For example, Alan's coworker's son has a disability. "I talk to him frequently. He remembers me out of uniform." Daniel and Crystal also mentioned having friends with children with autism. Crystal explained that she has learned about autism from her friends. "Just listening to their problems, how to deal with it, what they have done or what worked for them." These interactions with parents of PWD have informed what the LEOs know about disabilities.

Job experience. The second theme, job experience, refers to the on the job training that one gains with while on the job. Multiple participants indicated that experience on the streets, making traffic stops, or responding to critical issues in town provided ample experience and informed their perspectives of PWD. Specifically, several participants discussed community outreach opportunities, such as community barbecues, special education classroom visits, and volunteer work with Special Olympics. The participants explained that they learned how to interact with people who may have a disability, through these experiences.

Many participants focused on the importance of de-escalation during interactions with PWD. In the second focus group, Nick explained that, although he has had some struggles with impulsivity, he recognized the importance of de-escalation:

> It's hard not to escalate it sometimes when you're getting conflict back. It's easier when you can actually pinpoint that the person has a mental issue. For me it is. It's easier to bring myself down, to say, all right, they have some challenges that are beyond them.

Jordan explained that he de-escalated situations by talking to PWD. He described an interaction with a woman he suspected had disability. "She started going on about her birds. So I just let her go on about her birds. And then by the end, she was in the ambulance, and everything was good." Jordan focused on the importance of de-escalation through calming, although he explained that he does not explicitly tell the individual to calm down. Jordan realized in this interaction that by letting this woman talk about her interests, she would be more relaxed when the ambulance arrived. Kyle added, "You don't go in there and just start yelling at everybody. You just talk to them." Crystal agreed with Jordan's and Kyle's comments about using communication as a de-escalation method. Crystal explained, "By listening and talking and asking questions, you can find things out and guide the way you want your stop or situation to go." In addition to communication as a calming technique, it can provide the LEOs important information that may lead to a more successful interaction.

Despite the focus on de-escalation, some participants explained that sometimes situations escalate quickly. Jordan said, "You think things are going well but suddenly they're not. And that's no fun, going from 0 to 60." Scott added, "Equally as many situations as I've talked down, I've probably talked up. You hit the wrong button and it's hard to have the ability or to identify when—holy crap—I'm taking this down the wrong path." Because situations sometimes escalate quickly, the participants explained that they would like to receive more information about disabilities so they may recognize signs and learn some tools to handle the situations more successfully.

To support de-escalation, several participants explained the importance of empathy when interacting with PWD. Mike described,

> It's not going to work for every single scenario, but 9 times out of 10 if you can try to bring yourself to that level of that person, try to empathize, try to determine what's going on with that person, try to figure out what the crisis might be, or whatever the situation is, just trying to be empathetic. I've seen, at least in my experience, that goes a long way.

Mario added, "I think some people look at it as being weak, and it's not the right word. You have to be compassionate when you deal with people that are challenging the norm." This comment relates to Nick's quotation, where he said he needed to recognize that someone had a challenge so he could "bring himself down." Frankie described it as taking down the "harder, stern barrier" and "being more empathetic and more personable and stepping back from that harder line that we typically take." When the participants could recognize that someone had a disability, they described being able to empathize, which may help de-escalate situations.

One particularly interesting comment heard during both focus groups was regarding the reliance on people familiar to the individual (e.g., family member, parent, and friend) who are present during a call for service and can assist with communication and interactions. Lina said, "You try to listen and ask family members around what exactly is wrong with him. How can we approach to get through to him? Most of the time it works in the end." Crystal added that she feels lucky when there is a family member who can support the interaction. Alan and Brandon both mentioned relying on family members to describe triggers. For example, Alan said, "Touching them on the shoulder, or don't touch them, or whatever it might be." Brandon added, "And you don't want to set them off, or you need to do that certain thing to have them engage and talk with you." Several participants described that having someone there to give them strategies for the interactions was helpful although there is not always a familiar individual present at the scene to offer this advice.

Another helpful component is having prior information about the individual with a disability. Brandon explained that the dispatcher sometimes tells them that they have been to an address before. Brandon gave an example of what a dispatcher might say, "Hey, he's in a wheelchair. He's hard of hearing. There are weapons in the house. He's a vet. He's this and that." The participants explained that it was helpful to have this information. Brandon works for the sheriff's department, and his dispatcher can provide this information. Some of the other law enforcement agencies do not operate their information systems in a way that allows this information to be readily available. Several participants said that this would be helpful.

Current Training Needs of LEOs

The second research question was designed to ascertain the current training needs of LEOs regarding disability awareness and interactions with PWD. Through the data analysis, the two themes that emerged to address this question were training opportunities and the training needs of LEOs.

Training opportunities. The third theme, training opportunities, encompasses mandatory and voluntary training available throughout one's career as an LEO. Although most of the participants did not recall a mandatory training about different disabilities during their academy or during annual trainings, some LEOs reported attending trainings offered by a nonprofit organization. Although some LEOs reported attending these trainings, they made it very clear that it was not mandatory. However, across both focus groups, a few participants recalled having some type of mandatory training about PWD in the academy. In an attempt to describe the disability specific training, Alan stated,

> You get a little scratch on the surface. Here and there are some disabilities you'll be called [about]. Called to a scene where

there's some disability involved [but] I think it's more along the lines of mental health. And you've got crisis intervention training (CIT) as well. I can't think of anything else up and beyond.

Brandon specifically stated that, currently, "In the academy, they are doing more trainings for the mentally ill and disabilities. And it's not just one setting, it's annual." Although more context regarding the content of the training and examples were not expanded upon, Brandon indicated that, "The [disability] training does help and informed what I know about people with disabilities." When talking about disability-specific training, the conversation in both focus groups immediately shifted to a discussion about Crisis Intervention Training (CIT). This training was recognized as being important because, as Kyle reported, "Every time someone has some kind of mental disability or even depression, the CIT officer has to go." Kyle added the caveat that just because an LEO was trained in CIT does not mean that the LEO is "Amazing at talking to people." It takes practice and ongoing training.

Specifically, Brandon expressed,

> I think POST [Peace Officer Standards and Training] has put [a disability awareness training] on with CIT, the crisis intervention training, where we're required to have it. Before, it was a class that you could take if you wanted to, but now it's mandatory. And case law has actually kind of forced agencies to do these trainings. It's just the way it's going. We're required to do these trainings, it's not voluntary anymore.

As Rod mentioned, "I was going to say I couldn't think of any training I've had that was specifically about disability. Most of it's covered in CIT. And the behaviors overlap. I think all of our officers have to be CIT." Throughout the focus group discussions, some of the LEOs reported being trained in CIT and, as mentioned, in some cases this training is mandatory. However, for highway patrol, university departments, and some urban law enforcement agencies, this is not mandatory but available for some LEOs. When talking about the benefits of CIT, a majority of the participants indicated that mental health was the disability they are most trained on and that the most beneficial type of training is that where a person with the disability is present. For example, Rod indicated that when he attended CIT, they "Went to the VA hospital and talked to veterans with PTSD." This provided the opportunity to interact with a veteran and to hear "What it is like and how they like to be talked to."

In some cases, departments implement trainings based on federal incentives. For example, Frankie referenced a training that goes along with CIT, "the Mental Health First Aid Training (MHFA). The CIT class is 40 hours. The MHFA is an 8-hour class. In both of those, there's incentives for agencies to have a certain percentage of the agency compliant." Even with the implementation of incentives, some of the participants indicated that they seek additional

voluntary trainings based on topics of interest. For example, a majority of the participants referenced a training provided by a nonprofit organization, the JUSTin Hope Foundation. This foundation provides disability awareness training for first responders across the state. For example, Mario stated, "The one I can remember was dealing with autistic children." Mario further explained that, during this training, the trainer brought a child with a disability and their parent so that the LEOs could understand that the child was "Functioning but the disability was there. . . I think that was a very good class." Daniel added that the trainer of this class was an LEO who has a son with autism and that "He talked about his personal experience. That was a really good class. I thought I knew stuff about autism, but he really opens your eyes. Everyone should take that class." Furthermore, Scott stated that the training helped him with, "Putting the pieces together."

The main trainings discussed were about CIT and an autism training. Both trainings provided information about how to approach situations with people with mental health needs or autism. Specifically, when describing the CIT training, Kyle indicated, "In general, you do things differently, you don't just go up and start yelling. But you know from cues to do that call differently, or slow it down, or talk to them a little bit differently."

Although these trainings were reported as beneficial and prepared the participants for interactions, a majority of the participants indicated that ongoing practice and training is necessary. In addition to trainings attended, the participants indicated that a disability awareness training would be beneficial to broaden their understanding of how different disabilities manifest among different age groups.

Training needs. The fourth theme, training needs, encompasses the need for disability awareness training and suggestions relevant to training content and format, which directly inform the second research question. Participants across both focus groups articulated a need for training that extends beyond autism. Specifically, Crystal stated that "Autism gets pushed to the forefront. But there's so many other [disabilities] out there we're dealing with." Another participant, Mario, supported the need for more training by stating that "We should have more training than we get," and Crystal expressed, "Obviously any training would help." However, there were two participants who were hesitant about implementing new disability awareness training because, as Frankie expressed, "It's always nice to say that we would like more training on these [disabilities], but it's one aspect of our job." Nick also mentioned that "Some people will be receptive, some people won't. Some people are just stuck. It [disability awareness training] might open their eyes."

Another common remark among the participants was that LEOs don't have the "tools" to efficiently interact with PWD but that more training would be helpful because, as Scott stated, "Our officers are ill-quipped, ill-trained to handle some of these [situations with PWD]." Along the same idea, Alan stated that it is not necessarily about the specific disability, "But it's really about recognizing and having some training and understanding to recognize disabilities, whatever they might be and then connecting with that person in a manner that is acceptable."

After expressing the need for a disability awareness training, many of the participants such as Alan and Frankie suggested utilizing a "multipronged" or "multilayered" approach to the training that provides the "tools" needed for LEOs to understand and recognize different disabilities. Alan proposed that this approach will prepare LEOs to "do their job at a level that meets or exceeds that person's [someone with a disability] expectations." When designing the trainings, the participants felt strongly that it should be developed and presented in collaboration with an LEO to create buy-in for those in attendance. Alan further explained that the training should include descriptive information about "What does a disability look like? What does it sound like? How would it manifest? How might it present?" Following a generalized overview, it was suggested that specific strategies be provided to model appropriate engagement with a person with a disability. For example, Rod suggested,

> In the training we need to be shown examples. All of our officers have seen autistic people, people with Down syndrome . . . So, I think we might need to be shown visually, rather than told. We might need to be shown some typical interactions, whether they're staged or real.

Other participants also conveyed that examples of positive and negative interactions with PWD would be useful for trainings. As Nick stated, "Let's not Monday night quarterback, but run it through your head," which would provide the opportunity to think about how one can handle the situation in a different way. As a final note, Alan stated that potential training should "Not be death by PowerPoint," and that the "Younger guys will be saying: what's in it for me? Give them a reason to be invested." Overall, the participants provided an overwhelming response that meaningful disability awareness training is needed during the academy and annually.

Discussion

The purpose of this study was to determine the perceptions and training needs of LEOs regarding disability awareness. The findings indicate that LEOs' current perceptions of PWD are primarily shaped by personal interactions, experiences while on the job, and mandatory and involuntary trainings. In addition, the findings of this study suggest a

need for more training regarding disabilities to further understand how various disabilities manifest across environments. Finally, LEOs provided suggestions for the frequency, format, and content of disability awareness trainings.

LEOs' Perceptions of PWD

First and foremost, LEOs' perceptions of PWD are shaped through personal connections with friends and colleagues who have children with disabilities, friends who are special education teachers, and family members (i.e., siblings, cousins) who have a disability. A majority of the participants expressed that positive perceptions and descriptions of PWD were developed through these personal connections, and that they are the most familiar with autism. Specifically, the participants stated that these interactions provided an understanding of what it means to have autism, and that autism can manifest in different ways. As one participant stated, "you've heard the saying, if you've met one person with autism, you've met one person with autism." Although these personal relationships were reported as providing a positive foundation to one's perceptions of PWD, the participants consistently expressed the need to gain more knowledge about disabilities and stressed the importance of experiences with PWD and how those experiences influence perceptions during future interactions.

Job experiences influenced LEOs' perceptions of PWD. Job experiences were described as participating in various community events while at work (e.g., classroom visits, Special Olympics, and Shop with a Cop) and as handling calls for service (i.e., traffic stops, residence calls). As community events are clearly defined situations, LEOs feel more prepared for these interactions because they are aware that they will be interacting with an individual with a developmental disability unlike novel situations during calls for service. Although calls for service provide multiple opportunities to interact with PWD, there is a clear need for LEOs to gain a better understanding of disabilities. Results of this study align with prior research indicating that LEOs often overgeneralized what it means to have a disability and do not demonstrate the ability to differentiate between disabilities (Diamond & Hogue, 2021; Modell & Mak, 2008). For example, when asked whether there are any differences between mental health and cognitive or physical disabilities, participants described physical disabilities as being easy to identify because you can see them, and participants described mental and cognitive disabilities as mental illness, autism, Down syndrome, and posttraumatic stress disorder (PTSD). The inability to clearly differentiate between disabilities further supports the need for more training on disabilities (Modell & Mak, 2008) and on the differences between mental illness and learning disability (LD; Gendle & Woodhams, 2005), autism (Gardner et al., 2019; Modell

& Mak, 2008) and ID (Eadens et al., 2016; Henshaw & Thomas, 2012).

In addition, when discussing their job experiences, several participants described the importance of using de-escalation techniques when interacting with PWD. Specifically, they described how speaking calmly with the person can de-escalate the situation and may provide valuable information on how to handle the situation by talking with the person. The participants also explained that it is helpful if there is someone else (e.g., parent, sibling, and friend) with the individual who can coach the LEO through the situation. Thus, if there is someone around who is familiar with the behaviors of the PWD, LEOs should remain calm (e.g., speak slowly, use a neutral tone of voice) and ask questions regarding preferences for interactions and possible stimulatory behaviors. Although this often works, the participants explained that sometimes they try to de-escalate situations and then accidentally do or say something that escalates the situation. They acknowledge that even the mere presence of an LEO (i.e., uniform, gun, and stance) is enough to escalate a situation (Diamond & Hogue, 2021), especially if the PWD is not comfortable interacting with someone with this type of authority, increasing the need for awareness training.

LEOs' Training Experiences and Needs

Historically, law enforcement agencies implement a mandatory set of trainings during an initial academy and then require yearly trainings to stay informed on required topics mandated by individual law enforcement agencies, the state, or accrediting bodies (Belur et al., 2019; Diamond & Hogue, 2021; Dulin et al., 2020; McGinley et al., 2019). However, under 10 states require specific disability awareness training (Diamond & Hogue, 2021) and, in most cases, disability awareness training is voluntary or embedded within another training, decreasing the opportunity to delve deep into the topic of disabilities. Although the participants of this study were most familiar with autism spectrum disorder (ASD) and did not specifically request this training, previous literature supports the need for more training focused on specific disabilities such as ASD (Gardner et al., 2019; Modell & Mak, 2008) and ID (Henshaw & Thomas, 2012).

Finally, the last theme that emerged supports the call to make disability awareness training more specific, ongoing, and accessible. A study conducted by Modell and Mak (2008) found that although disability awareness training was mandated, 48% (of 124) participants reported never receiving the training and those who did described the training as basic and inadequate to meet their needs. Participants in this study emphasized the need for systematic and ongoing training regarding PWD, so that they could learn to spot the signs of disabilities and gain better tools for successful interactions. Furthermore, participants suggested that an LEO be involved in the planning and implementation of the training,

so that the other LEOs buy-in to the training. Moreover, participants in both focus groups emphasized the importance of involving an individual with autism and other disabilities in the training to provide the opportunity to further understand the various behaviors of PWD (Engelman et al., 2013; Kelly & Hassett-Walker, 2016). A systematic review of disability awareness trainings for LEOs found that a collaborative multidisciplinary approach was most successful for training (Viljoen et al., 2017). This interactive approach will provide opportunities for interactions with PWD and LEOs using role-play simulations and will avoid "death by PowerPoint." Although most participants expressed interest in future trainings, a few participants were cautious. One participant was hesitant because they felt overloaded by the training schedule, and another participant was concerned that some colleagues may be too set in their ways to accept the knowledge and tools of a disability awareness training. However, the overall consensus was that agencies should provide ongoing training regarding PWD.

Limitations

There were several limitations to this study. Few women and minorities participated in the study. Incorporating participants with other backgrounds and experiences may have led to different results and recommendations. Although agencies in rural locations were contacted during recruitment for this study, only one LEO from a rural area participated in the study. Interviewing LEOs from rural departments may have revealed different experiences and training needs. This study took place in one state; LEOs in other states may have different experiences with PWD or training needs. Another limitation was the bias of the research team. Each researcher wrote bias statements identifying their biases related to prior experiences and media coverage of law enforcement. Finally, this study only used one form of research, which limits generalization of results. However, this project served as a first step in exploring the current perspectives and training needs of LEOs regarding PWD.

Implications for Policy and Practice

There is an overwhelming need to support the strategic development and implementation of disability awareness training for LEOs. Although some states have passed legislation mandating disability awareness training for LEOs, there is a lack of consistency in terms of quality and availability (Diamond & Hogue, 2021; Modell & Mak, 2008). Thus, increased federal and revised state legislation may be warranted to ensure that law enforcement agencies are implementing systematic and ongoing disability awareness trainings. These trainings should be of high quality and developed in collaboration with LEOs, education professionals, and PWD to ensure accuracy of content and buy-in

from officers (Diamond & Hogue, 2021). Law enforcement agencies may consider hosting quarterly meetings to build trusting relationships between training partners to discuss the needs and development of training content. In addition, after relationships are developed between LEOs, education professionals, and PWD, it may be advantageous to implement a train-the-trainer model to encourage ongoing practical implementation of trainings. These trainings should avoid using only online delivery (Kelly & Hassett-Walker, 2016) as this may result in a lack retention of content and reduces real-time engagement with others. Due to the variation within disabilities, the content of these trainings should address general differences between mental health, cognitive disabilities, and physical disabilities. Furthermore, these trainings should discuss invisible versus visible disabilities to provide foundational awareness. Because LEOs have limited time to attend trainings, LEOs need strategies to improve positive outcomes when interacting with PWD. For example, due to the authoritative presence of LEOs, Diamond & Hogue (2021) recommended that LEOs become conscious of their behaviors that could be misinterpreted by PWD during calls for service. Law enforcement officers should consider the speed and tone of their voice and body language and should avoid the use of rhetorical questions and complex directives (Diamond & Hogue, 2021). As disability awareness trainings are implemented, formal data collection measures should be utilized to measure the implications of these trainings on future interactions between LEOs with PWD.

Finally, the results of this study shed light on the lack of consistent data collection across agencies, states, and the nation. Especially, each law enforcement agency in this study reported a unique way of tracking data regarding calls for service but there was a general consensus that more accurate data should be kept. Using a universal and consistent data system across law enforcement agencies will allow LEOs to track the type of interaction and the outcome of the call for service involving a PWD. Therefore, law enforcement agencies should facilitate a way for LEOs to collect information when they have had previous interactions with a person with a disability (Bezyak et al., 2019) by using a checklist for quick reference that can be accessed by LEOs and dispatchers during future calls for service. This checklist can include information about the person's behaviors, preferences, and behavioral needs, which might be helpful for dispatchers to assist LEOs to identify when PWD are present.

Future Research

Perceptions regarding disabilities among LEOs is an area warranting continued investigation (Chown, 2010; Eadens et al., 2016; Gardner et al., 2019). Although many state governments and law enforcement agencies are beginning to require mandatory disability awareness training, the quality

and impact of these trainings remain under investigated (Diamond & Hogue, 2021; Eadens et al., 2016). Thus, research is needed to determine the effectiveness of these trainings. Future research should include evaluations of trainings using quantitative methods, such as pre- and post-surveys directly related to the training content and Likert-type scales that measure disability-specific perceptions. Research should also include qualitative methods, such as open-end survey responses, focus groups, and one-on-one interviews with LEOs to gauge their perceptions. It may be advantageous for researchers to use a mixed-methods approach to gain a comprehensive view of trainings.

In addition to an evaluation of the training content and LEOs' perceptions of PWD, researchers should investigate the intersectionality of disability, race, gender, socioeconomic status, and how these factors impact the likelihood of contact with police (Perry & Carter-Long, 2016). Specifically, further investigation regarding the number of stops that result in a ticket being issued, an arrest, death, and/or felony charges incurred should be examined. Combined, this research may provide law enforcement agencies, legislators, and society the information needed to implement new and improved training opportunities to support PWD during their interactions with police.

Conclusion

Law enforcement officers' perceptions of PWD are shaped by previous personal interactions, on the job experiences, and engagement in mandatory and voluntary trainings. Although participants in this study generally had positive views of PWD, many did not demonstrate the ability to differentiate between various disabilities. As indicated in previous research, LEOs who lack this ability often overgeneralized by categorizing all disabilities as mental health or intellectual disabilities (Diamond & Hogue, 2021; Modell & Mak, 2008), which may impact an LEO's ability to appropriately handle calls for service that involve PWD regardless of the category or severity of the disability. Therefore, it is imperative that law enforcement agencies implement initial and ongoing disability awareness training to provide LEOs the tools needed to recognize the manifestation of various disabilities (Eadens et al., 2016; Gardner et al., 2019; Gendle & Woodhams, 2005; Henshaw & Thomas, 2012; Modell & Mak, 2008), which will, in turn, increase the likelihood of positive outcomes with PWD.

Appendix

Disability Awareness Interview Guide
Focus Group Questions

1. What is your experience with people with disabilities? (family, children, siblings, and neighbors)

2. What difference do you see if any, between cognitive disabilities, physical disabilities, and mental health conditions?

3. What do you think of when you hear the term *autism*?

4. In your experience, are people with disabilities more often victims of crimes or perpetrators of crimes?

5. How do you perceive your ability to handle a case involving a person with a disability as a victim, witness, or perpetrator?

6. What types of specific training have you received regarding people with disabilities?

7. What if any special skills do you feel a law enforcement officer should have in dealing with people with disabilities?

8. Is there anything else you would like to add regarding your perception of people with disabilities?

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References

Antonak, R. F. (1980). Psychometric analysis of the Attitude toward Disabled Persons Scale, Form O. *Rehabilitation Counseling Bulletin, 23*(3), 169–175.

Antonak, R. F. (1982). Development and psychometric analysis of the scale of attitudes toward disabled persons. *Journal of Applied Rehabilitation Counseling, 13*(2), 22–29. https://doi.org/10.1891/0047-2220.13.2.22

Antonak, R. F., Fielder, C. R., & Mulick, J. A. (1993). A scale of attitudes toward the application of eugenics to the treatment of people with mental retardation. *Journal of Intellectual Disability Research, 37*(1), 75–83. https://doi.org/10.1111/j.1365-2788.1993.tb00871.x

Antonak, R. F., & Harth, R. (1994). Psychometric analysis and revision of the mental retardation attitude inventory. *Mental Retardation, 32*(4), 272–280.

The Arc. (n.d.). *Criminal justice system.* http://thearc.org/wp-content/uploads/2019/08/16-117-The-Arcs-Position-Statements_B4_Criminal-Justice-System-1.pdf

Bailey, A., Barr, O., & Bunting, B. (2001). Police attitudes toward people with intellectual disability: An evaluation of awareness training. *Journal of Intellectual Disability Research, 45*(4), 344–350. https://doi.org/10.1046/j.1365-2788.2001.00339.x

Belur, J., Agnew-Pauley, W., McGinley, B., & Tompson, L. (2019). A systematic review of police recruit training programmes. *Policing*, *14*(1), 76–90. https://doi.org/10.1093/police/paz022

Bezyak, J. L., Clemens, E., Pergantis, S., & Tis, M. (2019). Disability and law enforcement personnel: Perceptions from the Rocky Mountain region of the USA. *Policing: A Journal of Policy and Practice*, *13*(2), 230–240. https://doi.org/10.1093/police/paz005

Bureau of Justice Statistics. (2017). *Crime against persons with disabilities, 2009–2015 statistical tables*. https://www.bjs.gov/content/pub/pdf/capd0915st_sum.pdf

Chan, P., Counts, J., Katsiyannis, A., & Ryan, J. (2019). Litigation and school resource officers. *Journal of Child and Family Studies*, *28*(12), 3296–3306. https://doi.org/10.1007/s10826-019-01504-7

Chan, P., Katsiyannis, A., Yell, M. L., & Zimmerman, J. (2021). Handcuffed in school: Legal and practice considerations. *Advances in Neurodevelopmental Disorders*, *5*(3), 339–350. https://doi.org/10.1007/s41252-021-00213-x

Chown, N. (2010). "Do you have any difficulties that I may not be aware of?" A study of autism awareness and understanding in the UK police service. *International Journal of Police Science & Management*, *12*(2), 256–273.

Diamond, L. L., & Hogue, L. B. (2021). Preparing students with disabilities and police for successful interactions. *Intervention in School and Clinic, 57*(1), 3–14. https://doi.org/10.1177/1053451221994804.

Dillenburger, K., Jordan, J.-A., McKerr, L., Lloyd, K., & Schubotz, D. (2017). Autism awareness in children and young people: Surveys of two populations. *Journal of Intellectual Disability Research*, *61*(8), 766–777. https://doi.org/10.1111/jir.12389

Dulin, A., Dulin, L., & Patino, J. (2020). Transferring police academy training to the street: The field training experience. *Journal of Police and Criminal Psychology*, *35*, 432–442. https://doi.org/10.1007/s11896-019-09353-2

Eadens, M., Cranston-Gingras, E. D., & Eadens, D. W. (2016). Police officer perspectives on intellectual disabilities. *Policing: An International Journal of Police Strategies & Management*, *39*(1), 222–235. https://doi.org/10.1108/pijpsm-03-2015-0039

Engelman, A., Ivey, S. L., Tseng, W., Dahrouge, D., Brune, J., & Neuhauser, L. (2013). Responding to the deaf in disasters: Establishing the need for systematic training for state-level emergency management agencies and community organizations. *BMC Health Services Research*, *13*(1), Article 84. https://doi.org/10.1186/1472-6963-13-84

Gardner, L., Campbell, J. M., & Westdal, J. (2019). Brief report: Descriptive analysis of law enforcement officers' experiences with and knowledge of autism. *Journal of Autism and Developmental Disorders*, *49*, 1278–1283.

Gendle, K., & Woodhams, J. (2005). Suspects who have a learning disability: Police perceptions toward the client group and their knowledge about learning disabilities. *Journal of Intellectual Disability*, *9*(1), 70–81. https://doi.org/10.1177/1744629505050923

Given, L. M. (2008). *The SAGE encyclopedia of qualitative research methods* (*Vols.1–0*). SAGE. https://doi.org/10.4135/9781412963909

Haring, T. G., Breen, C., Pitts-Conway, V., Wilson, R., & Gaylord-Ross, R. (1983). A social distance questionnaire for the attitudes of high school students toward handicapped peers. In R. Gaylord-Ross, T. Haring, C. Breen, & V. Pitts-Conway (Eds.), *The social integration of autistic and severely handicapped students* (pp. 1–12). San Francisco State University.

Henshaw, M., & Thomas, S. (2012). Police encounters with people with intellectual disability: Prevalence, characteristics, and challenges. *Journal of Intellectual Disabilities*, *56*(6), 620–631.

Johnson, R. B., & Christensen, L. (2017). *Educational research: Quantitative, qualitative, and mixed approaches* (6th ed.). SAGE.

Kelly, E., & Hassett-Walker, C. (2016). The training of New Jersey emergency service first responders in autism awareness. *Police Practice and Research*, *17*(6), 543–554. https://doi.org/10.1080/15614263.2015.112

McCauley, E. J. (2017). The cumulative probability of arrest by age 28 years in the United States by disability status, race/ethnicity, and gender. *American Journal of Public Health*, *107*(12), 1977–1981. https://doi.org/10.2105%2FAJPH.2017.304095

McGinley, B., Agnew-Pauley, W., Tompson, L., & Belur, J. (2019). Police recruit training programmes: A systematic map of research literature. *Policing*, *14*(1), 52–75. https://doi.org/10.1093/police/paz019

Modell, S. J., & Mak, S. (2008). A preliminary assessment of police officers' knowledge and perceptions of persons with disabilities. *Intellectual and Developmental Disabilities*, *46*(3), 183–189.

Oschwald, M., Curry, M. A., Hughes, R. B., Arthur, A., & Powers, L. E. (2011). Law enforcement's response to crime reporting by people with disabilities. *Police Practice and Research*, *12*(6), 527–542. https://doi.org/10.1080/15614263.2011.596713

Perry, D. M., & Carter-Long, L. (2016). *The Ruderman white paper on media coverage of law enforcement use of force and disability: A media study (2013-2015) and overview*. Ruderman Family Foundation. http://rudermanfoundation.org/white_papers/media-coverage-of-law-enforcement-use-of-force-and-disability/

Rosenbaum, P. L., Armstrong, R. W., & King, S. (1987). Parental attitudes toward children with handicaps: New perspectives with a new measure. *Developmental and Behavioral Pediatrics*, *8*(6), 327–334. https://doi.org/10.1097/00004703-198712000-00004

Rossman, G., & Rallis, S. (2017). *An introduction to qualitative research: Learning in the field*. SAGE.

Saleh, A. Z., Appelbaum, P. S., Liu, X., Stroup, T. S., & Wall, M. (2018). Deaths of people with mental illness during interactions with law enforcement. *International Journal of Law and Psychiatry*, *58*, 110–116. https://doi.org/10.1016/j.ijlp.2018.03.003

Viljoen, E., Bornman, J., Wiles, L., & Tönsing, K. M. (2017). Police officer disability sensitivity training: A systematic review. *The Police Journal*, *90*(2), 143–159. https://doi.org/10.1177/0032258X16674021

Yuker, H. E., & Block, J. R. (1986). *Research with the Attitudes Toward Disabled Persons Scale (ATDP) 1960-1985*. Hofstra University.

ORIGINAL PAPER

Autism Training for Law Enforcement Officers: A Scoping Review

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Abstract
Law enforcement officers are the primary individuals called and who respond to situations of heightened concern. They make split-second observations and decisions based on how best to react to given safety situations and those involved. Characteristics of autism spectrum disorders (ASD), if not properly understood and reacted to, may quickly escalate a law enforcement officer call in a negative way, making autism training for law enforcement officers imperative. To ascertain what is known about autism training for law enforcement officers, a scoping review was conducted. Five studies met final inclusion criteria. The trainees, context and development of the training, evaluation procedures, and training outcomes are synthesized to provide guidance for future training implementation teams. Areas for future research are presented.

Keywords Law enforcement · First responders · Autism · Professional development

The prevalence of autism spectrum disorder (ASD) has greatly increased over the years which research suggests may be due to both etiologic (e.g., advanced parental age; Shelton et al., 2010) and nonetiologic (e.g., changes in reporting practices; Hansen et al., 2015) factors. Compared to just 20 years ago, when the autism prevalence was 1 in 150 children, in 2021 the Center for Disease Control reported approximately 1 in 44 children in the United States are diagnosed with ASD (Center for Disease Control, 2021). Males continue to have a higher prevalence than females and are four times more likely to be diagnosed. Black and White children are diagnosed at relatively the same rate, while Hispanic children are less likely to be diagnosed with autism (Center for Disease Control, 2021).

Autistic Individuals' Engagement with Law Enforcement Officers

While the goal for autistic individuals[1] is to lead productive lives, unfortunately they are often likely to intersect with law enforcement officers. Autistic individuals are more likely than the general population to elope and/or wander,

may be reported as missing (Law & Anderson, 2011), and their behaviors (e.g., stimming) may be reported as suspicious (Debbaudt, 2002). Individuals on the spectrum may also encounter law enforcement officers during routine traffic stops/accidents, violations of civil code, or at school, as school resource officers may intervene when youth on the spectrum are engaging in self-harm or exhibiting aggression (Wallace et al., 2021). Further, autistic individuals may be a victim of a crime (Mayes, 2003; Petersilia, 2001) or a witness or suspect to a crime (Teagardin et al., 2012; Woodbury-Smith & Dein, 2014). It is important to note, there is little evidence that individuals on the spectrum are more likely to intentionally commit criminal acts compared to their neurotypical peers (Ghaziuddin et al., 1991; Mouridsen, 2012). In fact, according to the United States Bureau of Justice statistics, individuals with disabilities (including ASD) are nearly twice as likely to be victims of a crime when compared to individuals without disabilities (Harrell, 2017). Individuals on the spectrum may engage in illegal activities without understanding it is illegal due to deficits associated with ASD (e.g., Mesibov & Sreckovic, 2017). For instance, given their deficits in social skills, low social IQ, and preference for engaging on the internet, autistic individuals may access child pornography without understanding their actions are illegal and harming the child (Mesibov &

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[1] Identity first language or "on the spectrum" is used throughout this manuscript to respect the autistic community and a movement toward identity-first language and away from potentially ableist terms (Bottema-Beutel et al., 2021).

Sreckovic, 2017). Taken together, law enforcement officers are likely to engage with individuals on the spectrum. Rava et al. (2017) found approximately 20% of autistic individuals reported having encounters with law enforcement officers at least once by the time they reached their mid-twenties.

A select number of studies have looked at the prevalence and correlates between individuals with autism and interactions with law enforcement officers (e.g., Rava et al., 2017; Tint et al., 2017). Rava and colleagues (2017) found the only significant correlates increasing the odds of an individual with autism being stopped by police were gender and externalizing behaviors. Specifically, more males with autism interacted with law enforcement officers as did those individuals with autism who displayed externalizing factors. Tint and colleagues (2017) found similar results but mentioned further research in the intersection between ethnicity and autism in law enforcement engagement is needed. While race was not revealed as a significant correlate in these studies (i.e., Rava et al., 2017; Tint et al., 2017), Furfaro (2018) argues race most likely is a factor even if there is little data within the intersection of autism and race to date. Anecdotally, autistic individuals and their families have shared fears about increased engagements with law enforcement officers based on race and autistic behaviors (Ball & Jeffrey-Wilensky, 2020; Furfaro, 2018). Hutson et al. (2022) contend interactions with law enforcement officers and Black autistic men present complex challenges, and it is imperative for law enforcement officers to understand how race and disability increase risk for Black autistic men.

Specific behavioral characteristics common in ASD may increase or exacerbate encounters with law enforcement officers. Such behaviors include: speech and communication delays; stereotyped repetitive behaviors both physical and verbal; hyper or hyposensitivity to sensory input such as sound, light, or touch; poor eye-contact; and inflexibility or over-adherence to routines (APA, 2013). Autistic behaviors such as those listed may be misinterpreted by community members as signs of intoxication or suspicious activity leading to emergency calls. Ball and Jeffrey-Wilensky (2020) argue that, in certain instances, there may not be a need to call law enforcement officers as someone being different is not an emergency. However, if called on scene, law enforcement officers may misread the behaviors of autistic individuals as defiant, showing a lack of respect, or threatening (Debbaudt, 2007; Debbaudt & Rothman, 2001; Railey et al., 2020). These misinterpretations have led to outcomes such as restraint, arrest, and death (Copenhaver & Tewksbury, 2019).

Given the unique characteristics of autism, potential misinterpretations of behavioral characteristics of autism by law enforcement officers, and media attention surrounding grave interactions with law enforcement officers and autistic individuals, it is not surprising parents, caregivers,

and professionals report being fearful of police contact for their loved one with ASD (Wallace et al., 2021). In a survey study of 372 parents, caregivers, and professionals, 60% reported being fearful of police contact with most conveying they were concerned the law enforcement officer or autistic individual may misunderstand each other, the autistic individual may have difficulty responding to questions during the encounter, and the autistic individual may act aggressive or defiant during the encounter which could lead to use of force (Wallace et al., 2021). Parental concerns combined with negative interactions have been a driving force of some police departments mandating autism training for law enforcement officers (e.g., Maxwell, 2022).

Law Enforcement Officers' Knowledge and Training of Autism and Interactions with Autistic Individuals

Recognizing the split-second decision-making necessary by law enforcement officers, training in how to recognize, support, and engage autistic individuals is essential (Crane et al., 2016; Gardner et al., 2019; Teagardin et al., 2012). Research indicates law enforcement officers who receive high-quality, autism training feel more confident in their abilities to support autistic individuals (Love et al., 2022). Unfortunately, many law enforcement officers have not received specific training on ASD and how to effectively engage with autistic individuals during encounters (Crane et al., 2016; Gardner et al., 2019) and/or do not fully understand autism or the defining features of autism (Chown, 2010).

In their analysis on training of law enforcement officers, Gardner and colleagues (2019) found 72% of those surveyed reported having no official training on how to support autistic individuals. However, those who did receive training stated they felt better prepared when they arrived at a situation involving an individual on the spectrum. Based on their results, Gardner et al., (2019) asserted a need for intentional training in this area. Railey and colleagues (2020) conducted a systematic review of the extant literature on ASD and law enforcement training and found only two studies (Murphy et al., 2017; Teagardin et al., 2012) that empirically examined law enforcement officer training on autism. The authors argued their review illuminates the need for more empirical evidence on autism training for law enforcement officers to establish effective training protocols.

With a lack of empirical research on and training for law enforcement officers, the Autism Society developed the Safe and Sound initiative in 2005, with a goal to develop high-quality resources on topics including overall safety for autistic individuals, preparing for, and potentially preventing emergencies, as well as risk management (Autism Society, n.d.). Specific resources were created for multiple audiences

including emergency personnel, social workers, individuals working within the criminal justice system, law enforcement officers, and more. While these resources are valuable, McGonigle et al., (2014) argue that the dissemination of materials like these can be fragmented and noted concern that measures of actual impact of these efforts are not available. Others point out that while training law enforcement officers on engaging with autistic individuals is an essential step, little is known about the long-term effectiveness of training or how such training impacts real-world engagements between law enforcement officers and autistic individuals (Ball & Jeffrey-Wilensky, 2020).

Purpose

A significant problem exists given what is known about the ever-increasing prevalence of ASD diagnoses, coupled with the high incidence of interactions between law enforcement officers and autistic individuals and a seeming lack of specific law enforcement officer training on autism or empirical studies of such training and effectiveness. The systematic literature review conducted by Railey and colleagues (2020) on autism training for law enforcement officers is notable and the authors' evaluation of the studies is a needed step to examine the efficacy of these trainings. The purpose of this review is to extend that work by completing a scoping review to explore the state of the current research literature regarding training for law enforcement officers on autism. While scoping reviews and systematic reviews have similarities, there are key differences (Munn et al., 2018). Systematic reviews begin by asking specific questions on a given topic. Using key terms, the study team searches for studies that will answer their a priori questions. On the other hand, a scoping review includes exploration of a broad question or topic. The purpose of a scoping review is to examine the extent of the available literature or evidence on the broad question or topic to highlight gaps. As such, the purpose of this scoping review was to identify and synthesize all research available on studies that have conducted a training with law enforcement officers on autism to highlight the available literature and knowledge on the topic and provide guidance to research teams implementing training and future directions for research.

Methods

The present scoping review followed the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR; Tricco et al., 2018). The goal of this review was to synthesize all studies that conducted training with Law enforcement officers

on autism. As such, eligibility criteria for selected articles included both qualitative and quantitative studies. Second, to be included in the review, training had to be conducted as part of the study, and the trainees had to include law enforcement officers. Third, the training must have included information on autism. The scope was broad and therefore studies that included training on any information on autism (e.g., characteristics, strategies for communication) were eligible. Finally, studies were included if they were written in English and included in peer-reviewed journals. Dissertations and chapters were omitted because they had not been evaluated using the peer review process beyond the university setting.

Search and Screening Procedures

The study team identified nine electronic databases relevant to the scoping review topic which were included in the search process (Academic Search Complete, Criminal Justice Abstracts, Cumulative Index to Nursing and Allied Health Literature, Education Sources on EBSCO, ERIC, Psychology and Behavioral Sciences Collection, PsycINFO, Web of Science Core Collection, SocIndex). All possible combinations and derivations of the following search terms were used: (a) law enforcement or police or cop or officer or first responder or firefighter or EMS or dispatch or policing or sheriff; and (b) autism or Asperger or autistic; and (c) training or education or learning or knowledge or professional development or professional learning. The initial search was conducted on November 1, 2021 and boundaries were not set on the year of publication.

The initial search yielded 655 articles after duplicates were removed within databases, but not across databases. The titles, abstracts, and authors of all articles were inputted in an excel document. The first and third authors read all titles and abstracts to determine if they met the eligibility criteria stated above and independently coded the article. If the article met eligibility criteria it was coded 1 and if it did not meet eligibility criteria a code of 0 was given. If more information was needed to determine whether the article met eligibility criteria it was coded a 1. As a measure of reliability, interobserver agreement was calculated by taking the number of agreements (613) and dividing by the total number of agreements plus disagreements (655) and multiplying by 100. Interobserver agreement for the title and abstract coding was 94%.

Any article that was coded a 1 by either coder was pulled for further review. After completing the initial search, 39 articles were identified as needing further review. After removing the duplicates across databases, 14 articles remained and were pulled for a full read to determine if they met the eligibility criteria. Ancestral searches of all 14 articles were conducted to identify any additional articles. One article was identified during the ancestral search and

was read in entirety to determine if it met inclusion criteria. The first and third author read all 15 articles in full and came to a consensus on which articles should be included in the review based on the eligibility criteria. There were no disagreements across all 15 articles. Of the 15 articles read in full, five were removed because the training was not provided as part of the study, four were removed because the training was not provided to law enforcement officers, and one was removed because it was a literature review (see Figure 1).

Data Charting and Synthesis

Before charting the data, articles were read multiple times by the authors to better understand what types of studies

have been conducted on autism training for law enforcement officers and what data were available. Previous reviews were also examined to determine how other researchers have evaluated and synthesized the extant literature (i.e., Railey et al., 2020). For the current review, data were extracted for the following variables: study design, study aim, number of participants, participant job role, training format, training duration, training content, dependent measures, and main findings. Data were extracted and entered in a table by the first author. The third author confirmed all data entered were accurate by examining data in the table and comparing it with the article. The data were then synthesized based on trainee job roles, context of the training, development of the training, and evaluation and outcomes of the training to provide a broad picture of what these trainings look like in

Fig. 1 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram of the article selection process
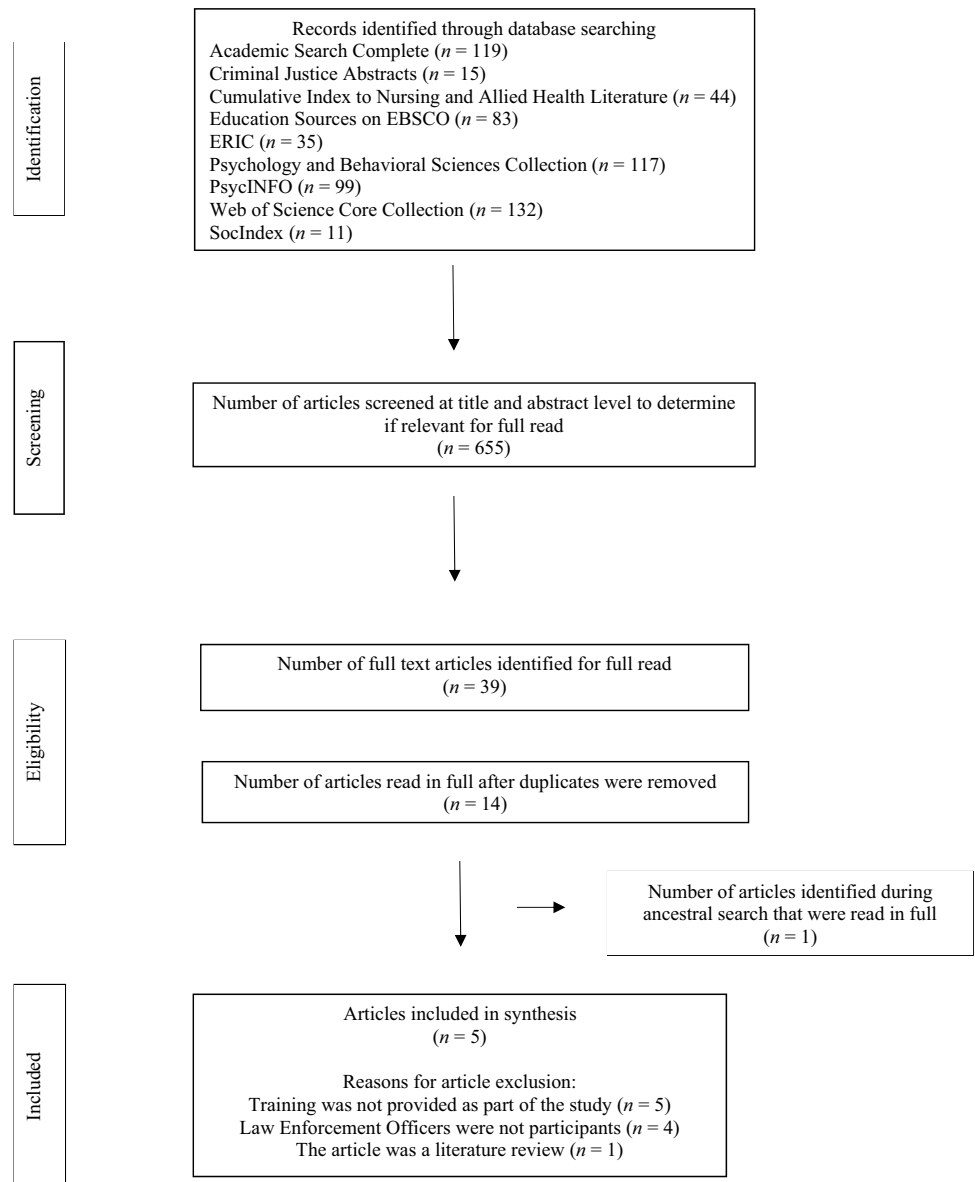
context, how they were developed, and the efficacy of the trainings. Five articles met the eligibility criteria and were identified for inclusion in this review.

Results

There were 501 participants across all five studies. Characteristics of the included articles (study aim, study design, training duration and format, and main findings) are in Table 1. The training context, including development of the training and content of the training, and the evaluation and outcomes of the trainings are synthesized across studies below.

Training Context

The development and content of the training varied across the five included articles. Four articles reported on the procedures utilized to develop the training or parts of the training. Two studies included autistic individuals in the development of the training (i.e., Gardner & Campbell, 2020; Love et al., 2020). The training conducted in Love et al. (2020; Emergency Network Autism Community Training) was created in partnership with stakeholders and based on an intervention called Police Autism Community Training (PACT). The PACT was created by a team of stakeholders including family members of autistic individuals, researchers, members of a local autism community group, and police officers. The training was built on current research-based information about ASD and police officer needs, piloted in urban and rural areas, and anecdotal data were collected. In the training conducted in Gardner and Campbell (2020), a voluntary simulation training was offered. Part of the training included simulation videos where professionally trained actors, some of whom were autistic, re-enacted incidents that required a response from a law enforcement officer.

Hinkle and Lerman (2021) implemented behavioral skills training for officers and police cadets and the experimenter created two different task analyses (i.e., non-escalated situations, escalated situations) centered around gaining compliance without physically touching the autistic individual. The task analyses were informed in part by a crisis intervention trainer at a metropolitan police department and law enforcement agencies' protocols. During the role play portion of the session, a trained research assistant followed a script depicting ASD behaviors. The video training provided in Teagardin et al. (2012) was titled "Law Enforcement: Your Piece to the Autism Puzzle" and was produced by the Sahara Cares Foundation (Sahara Cares, 2008). In the study conducted by Murphy

et al. (2017), a consultant psychiatrist with experience in autism diagnosis and management provided the training.

All studies reported including content on strategies for how to deescalate, respond to, and/or interact with autistic individuals (Gardner & Campbell, 2020; Hinkle & Lerman, 2021; Love et al., 2020; Murphy et al., 2017; Teagardin et al., 2012). Most of the reviewed studies reported including content on general information about autism (Hinkle & Lerman, 2021; Murphy et al., 2017; Teagardin et al., 2012) and on how to recognize autism or behaviors consistent with ASD (Gardner & Campbell, 2020; Love et al., 2020; Teagardin et al., 2012). Additional training content included commonly reported incidents involving autistic individuals, behavioral difficulties, victimization of autistic individuals, suspected abuse and criminal activity of individuals on the spectrum, and resources for families and autistic individuals (Gardner & Campbell, 2020), and strategies for interacting with caregivers (Hinkle & Lerman, 2021).

Evaluation and Outcomes of the Training

All studies in this review included a study aim to examine the efficacy of a training on autism for law enforcement officers. To evaluate the efficacy of the training, studies implemented pre and post test designs (Gardner & Campbell, 2020; Love et al., 2020; Murphy et al., 2017), randomized, waitlist controlled, between groups design (Teagardin et al., 2012), and single subject and between groups design (Hinkle & Lerman, 2021).

Pre and Post test Designs

To evaluate the effectiveness of the training, most of the studies utilized pre and post training measures. Murphy et al. (2017) administered a five-question survey to examine ASD awareness, communication strategies, and managing autistic individuals experiencing a meltdown before and after the training using a 10-point Likert scale. Mean scores indicated a statistically significant difference. To examine the efficacy of ENACT, Love and colleagues (2020) administered a 10-item questionnaire adapted from the Autism Stigma and Knowledge Questionnaire (Harrison et al., 2017) to measure autism related knowledge using a true/false format, and one question to assess self-rated knowledge of ASD, one question to assess confidence working with autistic individuals, and one question to assess comfort responding to a call using a 5-point Likert scale. Additionally, the researchers asked three questions on perceptions of the training using a 5-point Likert scale. Participants' self-rated ASD knowledge significantly improved, self-rated confidence responding to a call involving an autistic individual significantly improved, and comfort level responding to a call involving an autistic

Table 1 Characteristics of reviewed studies

Authors and location	Study aim	Study design	Participants (n; job role)	Training duration and format	Key study outcomes
Teagardin et al. (2012) United States	To evaluate the effectiveness of a 13 min video developed by the Sahara Cares Foundation on LEO's knowledge of ASD, and confidence in identifying and interacting with autistic people.	Randomized, waitlist controlled, between groups design	82 (42 in training group, 40 in control group); "in the field officer" (e.g., patrol officer or detective)	13 min; video	Participants in the training group outperformed participants in the control group. Participants' knowledge of ASD, confidence in identifying autistic people, and confidence in interacting with autistic people significantly improved after training for both groups but did not reach mastery.
Murphy et al. (2017) Ireland	To pilot an autism awareness training on awareness of ASD, communication strategies, and approaching autistic individuals experiencing a meltdown.	Pre and post test design	11 members of An Garda Síochána (i.e., the police force of the Republic of Ireland)	90 min	Mean scores before and after training session indicated a statistically significant difference.
Gardner & Campbell (2020) United States	To describe LEO ASD training and experiences, knowledge of ASD, self-confidence, and self-monitoring of their performance; to evaluate relationship between prior training and outcomes from calls; to examine if there are changes in law enforcement officers' ASD knowledge, confidence, and self-monitoring their performance during calls after training; and to examine role of LEO gender.	Pre and post test design	157 Law enforcement officers from police and sheriff departments	4 training sessions; 4 hr didactic/lecture presentation; 29 law enforcement officers also participated in a SIM training with live feedback, coaching, and debriefing	Pre and post tests indicated law enforcement officers who participated in training program made significant improvements in knowledge of ASD, confidence in responding to calls, and self-monitoring their performance during calls. Compared to males, females completed CIT training less frequently, used force and handcuffs less frequently, and reported greater improvements in self-confidence and self-monitoring their performance during calls.

Table 1 (continued)

Authors and location	Study aim	Study design	Participants (n; job role)	Training duration and format	Key study outcomes
Love et al. (2020) United States	To evaluate the initial effectiveness of the Emergency Network Autism Community Training on first responders' knowledge of ASD, confidence working with autistic individuals, comfort responding to calls with autistic individuals, and satisfaction with the training.	Pre and post test design	99 police officers, 1 paramedic, 51 corrections officers, 12 deputies, 37 firefighters, 19 other, 4 multiple roles, 1 missing data	2 hr in person training; lecture, group discussion, and short videos	Participants self-rated ASD knowledge significantly improved, self-rated confidence responding to a call involving an autistic individual significantly improved, and comfort level responding to a call involving an autistic individual significantly improved. Participants rated the training favorable, felt the training met their expectations, was helpful, and information was clearly presented.
Hinkle & Lerman (2021) United States	To evaluate the efficacy and acceptability of a performance-based training for law enforcement officers on gaining compliance without physically touching autistic individuals.	Pilot study - single-subject nonconcurrent multiple baseline design across three participants Group training-between groups design with comparison of baseline and post-training performance (half the participants received role play training and the other half received lecture only training)	1 sergeant, 1 assistant chief security officer, 1 school resource officer, 24 police cadets	Pilot study- length ranged from 1 hr 40 min to 2 hr 38 min; lecture, task analysis provided and described, video, text prompt, participants in single-subject study and group training with role play, role played with RA and immediate feedback was provided.	Pilot study - Mean percentage of steps correct increased from baseline to role-play with feedback and maintained during post-training for all three participants. Group study - Change from baseline to post training was statistically significant for both lecture only and lecture plus role play groups. There was a significant difference between the post-training performance of participants in the lecture only group and participants in the lecture plus role play group.

LEO law enforcement officer, *SIM* simulation, *CIT* Crisis Intervention Team, *RA* research assistant.

individual significantly improved from pre-test to post-test. Participants rated the training favorable, felt the training met their expectations, was helpful, and information was clearly presented.

The study conducted by Gardner and Campbell (2020) included several study aims: describe law enforcement officer ASD training and experiences responding to ASD calls; describe knowledge of ASD, self-confidence, and self-monitoring of their performance; evaluate the relationship between prior training and outcomes from calls; examine if there are changes in Law enforcement officers' ASD knowledge, confidence, and self-monitoring after participating in an ASD specific training; and examine role of law enforcement officer gender. To address the study aims, participants completed the Gardner et al. (2019) demographic questionnaire, as well as a 16 item Knowledge of Autism questionnaire pre and post which used a true/false format, a six item Confidence in Responding questionnaire pre and post which used a 5-point Likert scale, and a five item Self-Monitoring of Response pre and post questionnaire which used a 5-point Likert scale. Results indicated 65% of law enforcement officers reported having a relationship with an autistic individual. Most law enforcement officers did not have prior ASD training and more than half reported having crisis intervention team (CIT) training. Approximately 60% reported responding to a call involving an autistic individual during the last year. Law enforcement officers with prior ASD training or CIT training did not feel more adequately prepared to respond to a call compared to those with no prior training. No difference was found between law enforcement officers with prior ASD training and those without prior ASD training in use of force, handcuffs, or involuntary hospitalization. Law enforcement officers who had CIT training were more likely to use force compared to those who did not have CIT training. Pre-training knowledge of autism and self-reported preparedness did not differ whether law enforcement officers had completed previous ASD training or CIT training, however, for law enforcement officers who had completed prior autism training or CIT training, their self-reported confidence in the ability to respond to calls involving autistic individuals was significantly higher. Law enforcement officers who participated in the training program made significant improvements in knowledge of ASD, confidence in responding to calls, and self-monitoring their performance during calls after the training. Females completed CIT training less frequently and used force and handcuffs less frequently compared to males. Female officers reported greater improvements in self-confidence and self-monitoring their performance during calls compared to males. For a complete summary of the results please see Gardner and Campbell (2020).

Randomized, Waitlist-Controlled, Between Groups Design

One study utilized a randomized, waitlist controlled, between groups design to evaluate the effectiveness of a 13 min video on knowledge of ASD and confidence in identifying and interacting with autistic individuals (Teagardin et al., 2012). The researchers delivered a questionnaire pre and post training, which included 12 questions (10 short answer to assess knowledge of ASD, two Likert scale to assess level of confidence in identifying and interacting with autistic people). Results indicated participants in the training group outperformed participants in the control group. Participants' knowledge of ASD, confidence in identifying autistic individuals, and confidence in interacting with autistic individuals significantly improved after training for both groups. The authors noted participants did not reach mastery and suggest that a 13 min video alone may not be sufficient to train law enforcement officers on ASD.

Single Subject and Between Groups Design

One study utilized a single-subject nonconcurrent multiple baseline design across three participants as a pilot study and then implemented a group training-between groups design with comparison of baseline and post-training performance. The goal was to evaluate the efficacy and acceptability of a performance-based training for law enforcement officers on gaining compliance without physically touching the autistic individual (Hinkle & Lerman, 2021). For the group training, half the participants received role play training with feedback and the other half received lecture only training. To evaluate the efficacy of the training, the authors created two task analyses (i.e., escalated situation and non-escalated situation) and as the participant engaged in a role play scenario, the research assistant scored each step as correct, incorrect, or not applicable based on the script for the role-play session. Participants also completed a social validity questionnaire which included Likert scale items (participants in the pilot study also completed three open-ended response items). For the single subject study, all three participants' mean percentage of steps correct increased from baseline to role-play with feedback and was maintained during post-training. However, participant one was given a handout with procedures he could reference during role plays because his data were variable in responding during the "role-play with feedback" phase. For the group study, change from baseline to post training was statistically significant for both lecture only and lecture plus role play training. There was a significant difference between the post-training performance of participants in the lecture only group and participants in the lecture plus role play group, with those in the lecture plus role play outperforming those in the lecture only group.

Social validity data indicated participants felt the training increased their preparedness, the training procedures and task analysis steps were acceptable, and they appreciated the role play scenarios the most. Respondents reported wanting more role play opportunities, an opportunity to receive feedback on performance (for lecture only group), more practice with different scenarios, walking through scenarios before performing steps (for lecture group only), and practicing with autistic people. This was the only study that examined observer reports of first responder behavior, rather than self-reports.

Discussion

Overall, there is limited work focusing on the area of law enforcement officer training and autism. The results from this scoping review represent five articles that met the eligibility criteria and highlight the current state of research literature on the topic. The main findings of the review are highlighted below including suggestions for areas for further research and policy recommendations.

Training Context

Content of the training varied across the studies, but most often included general information about autism, strategies for law enforcement officers when engaging with autistic individuals on calls, and tips for recognizing behaviors consistent with autism. While studies incorporated elucidation of training content, it is likely a complete description of training topics was not included in every study description. Given such little information is available on the topic of training for law enforcement officers on autism, a salient focus for future researchers is to contextualize the training content as much as possible to provide guidance for other professionals looking to replicate and extend the research body.

Based on the published literature, it does not appear any of the studies encompassed content on the intersection of race, ability, and law enforcement officers in their training. As aforementioned, it is likely a complete description of the training content was not provided in the reviewed articles. Tint et al., (2017) argue for more intentional research around race, autism, and first responder interactions. Therefore, two important next steps come to light. First, incorporating specific content for law enforcement officers on the intersection of race and autism is necessary. Hutson et al. (2022) suggest trainings utilize a Critical Dis/Ability theory lens that encourages officers to engage in dialogue, reflection, and to interrogate their beliefs, and to employ simulations focused on behavioral shifts. Trainings could include information about intersecting identities and how those intersections

impact interactions for Black autistic men, as well as personal narratives (see Hutson et al., 2022 for a more expansive review of how to incorporate the intersection of race and autism in law enforcement officer trainings). Second, it is imperative to examine the efficacy and impact of such training. A goal is for encounters with law enforcement officers to be productive and safe. This two-step process will allow for more training in intersections between ability, race, and first responder encounters and will enable the gathering of necessary data in terms of how such training is parlayed into field encounters.

Every individual on the spectrum is unique and therefore one cannot assume a standard interaction will take place between law enforcement officers and autistic individuals. Therefore, the perspectives and experiences of autistic individuals, their families, and caregivers should be a central focus in designing and/or implementing training for law enforcement officers on autism to call attention to the diversity found within this population. Of the five studies included in this review, two specifically mentioned involving individuals on the spectrum in various roles related to the training. One study included autistic individuals and family members in the training development phase (Love et al., 2020) and another utilized trained actors (some of whom were autistic) to simulate possible interactions between law enforcement officers and autistic individuals (Gardner & Campbell, 2020). Incorporating a community approach to aspects of autism training for law enforcement officers is important as it underscores varying experiences, perspectives, knowledge, and understandings. Including members from the autistic community in the development and delivery of trainings will create more relevant trainings (Masterton, 2018). An essential constituent in law enforcement officer training on autism must be the autistic individual. Involving those on the spectrum, their family members, and caregivers in all aspects of the training process (training planning, development, delivery, and follow-up) will add to the overall efficacy of the training and provide additional opportunities for positive engagement between autistic individuals and law enforcement officers. Commercialized videos including autistic individuals have been produced and are available specifically for first responder training (see https://autismrisk management.com/dennis-debbaudt/).

Study Design

In addition to training participants and training content, other study design elements might highlight areas for future work. All studies included in this review were quantitative with a study aim to examine training efficacy; many included pre-post test data collection (Gardner & Campbell, 2020; Love et al., 2020; Murphy et al., 2017). While pre-post test data is useful, randomized control trial studies would further

delineate the efficacy of autism training for law enforcement officers. Teagardin et al. (2012) utilized a randomized, wait-list controlled, between-groups design and found that participants in the training group outperformed participants in the control group. Knowledge of ASD and confidence in interacting with autistic people also significantly improved after training. However, improved pre to post data does not necessarily equate to mastery of a topic. Teagardin et al., (2012) noted that post test scores were still much lower than what the researchers had hoped.

Longitudinal data is needed to further shed light on study effectiveness to fully understand the impact such training has on law enforcement officers' lived-experiences in the field. No study meeting eligibility criteria included longitudinal data. Without fully understanding how trained law enforcement officers take knowledge gained to the field and enact that knowledge with autistic individuals, it is difficult to understand the impact training has on safety encounters over time. To date, studies have not linked post-training behavior to actual calls with autistic individuals, which makes ascertaining the impact of the training difficult (Gardner & Campbell, 2020). A likely hurdle in studying impact is knowing whether a law enforcement officer has indeed engaged with an autistic individual in the field. Law enforcement officers recognizing an autistic individual on a call is key (Debbaudt, 2002, 2007). At times, individuals will disclose they are autistic, a person on the scene will disclose for the individual, or there may be signs or cues that alert the law enforcement officer to autism. Part of an effective law enforcement officer training on autism should include ways to identify autism disclosure. Once law enforcement officers understand the importance of autism disclosure and ways to support and encourage disclosure, it may be less difficult to link specific law enforcement officer calls to interactions with autistic individuals.

A needed next step is to include longitudinal research where law enforcement officers who completed training record contacts involving autistic individuals (when disclosure occurs) and engage in follow up conversations (via interviews or surveys) with researchers. Longitudinal studies which include qualitative follow-up data utilizing open-ended surveys and interviews will illuminate the impact training has on the law enforcement officers and autistic individuals who are involved in the interaction. It is imperative that the research community examines how law enforcement officers are transferring the knowledge gained from the training to their interactions in the field and if such training results in safe interactions with autistic individuals. While longitudinal studies are ideal, they are not without their own hurdles. Ball and Jeffrey-Wilensky (2020) point out that longitudinal data on the impact of law enforcement officer training on autism is costly, time-intensive, and the research design must be solidly in place prior to the training

beginning; yet the authors stress that despite these difficulties, results will be worthwhile. Pursuing such longitudinal studies may be advantageous, given the data gleaned will likely reveal impacts of training for both law enforcement officers and autistic individuals.

Policy Implication and Recommendations

There are policy implications and recommendations that come to light after examining the results of this scoping review. To date, there are sporadic mandatory training laws across the United States (e.g., Florida, New Jersey, Utah, Pennsylvania) requiring law enforcement officer training on autism. Making such training universally mandated will go a long way in creating the means for fostering positive interactions between law enforcement officers and autistic individuals. Mandated training sends a message to the community that autistic individuals are a priority (Love et al., 2022). However, it is imperative mandated training have a standard in which it is held to. Currently, there is no minimum standard for autism training for law enforcement officers and no stated qualifications for the persons providing the training. This results in training ranging in duration (e.g., 13 min; 8 hrs), format (e.g., video; simulation), and content (e.g., de-escalation; family resources), which was demonstrated in this review. Findings from this review indicate a brief 13 min video can increase participants' knowledge of ASD, confidence in identifying autistic characteristics, and confidence in interacting with autistic people, but is not sufficient to reach mastery. Research is quickly emerging on this topic and recently law enforcement officers voiced training should be on-going and should include hands-on experience (Love et al., 2022). Herbert et al. (2022) contend experiential training co-created with autistic individuals and law enforcement officers is imperative. This new research should be taken into consideration as training programs and opportunities are developed. Further, findings from this review illuminate the lack of research on actual impact of autism training in the field. It is imperative policy makers work in collaboration with researchers to ensure the minimum standards are based on research. The research and policy communities have an obligation to bring awareness to the necessity of mandatory training for law enforcement officers on autism and to ensure that mandated training be based on research and provided by qualified individuals. Calling for universal autism training across the United States may be unrealistic given the decentralization of police departments across the country. Researchers and policy makers may consider offering a federally sponsored training program or free access to research-based training programs so the responsibility does not fall on individual police departments.

In addition to mandated, research-informed autism training for law enforcement officers, policies requiring contact

tracking between law enforcement officers and autistic individuals (when disclosure occurs) will also prove influential. Currently, it is difficult to fully contextualize how often and the circumstances of interactions between autistic individuals and law enforcement officers. This also complicates studying the effectiveness of training. Ball and Jeffrey-Wilensky (2020) discuss survey results of 20 large police precincts in the United States. Of the 20 departments surveyed, only three responded they log encounters between law enforcement officers and individuals on the spectrum; four other departments shared they include autism diagnosis in incident reports if there is disclosure. Without this data collection, it is impossible to truly examine both the nature of exchanges between autistic individuals and law enforcement officers and the efficacy and impact of training when such training occurs. Mandated training coupled with intentional accounting of contacts between law enforcement officers and those on the spectrum will set the stage for the opportunity to conduct in-depth research on how to improve such engagements with effective training. With the increase in prevalence of autism, equipping law enforcement officers with knowledge and strategies to support autistic individuals during these interactions is good practice. Given the results of this scoping review, further research and policy in this area is needed. Understanding gained from such research and the impacts of policy will influence initial law enforcement officer training, follow-up professional development, community outreach programs, family and caregiver support, and most importantly positive relationships between law enforcement officers and autistic individuals.

Declarations

Conflict of interest The authors declare that they have no conflict of interest.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). APA.

Autism Society. (n.d.). Safe and sound. Retrieved December 7, 2021, from https://www.autism-society.org/living-with-autism/how-the-autism-society-can-help/safe-and-sound/

Ball, E., & Jeffrey-Wilensky, J. (2020). Why autism training for police isn't enough. *Spectrum.* Retrieved December 8, 2021, from https://www.spectrumnews.org/news/why-autism-training-for-police-isnt-enough/

Bottema-Beutel, K., Kapp, S. K., Lester, J. N., Sasson, N. J., & Hand, B. N. (2021). Avoiding ableist Language: Suggestions for autism researchers. *Autism in Adulthood, 3*(1), 18–29. https://doi.org/10.1089/aut.2020.0014

Sahara Cares (Producer). (2008). Law enforcement: your piece to the autism puzzle. Available from http://www.saharacares.net

Chown, N. (2010). Do you have any difficulties that I may not be aware of? A study of autism Awareness and understanding in the UK police service. *International Journal of Police Science & Management, 12*(2), 256–273. https://doi.org/10.1350/ijps.2010.12.2.174

Center for Disease Control. (2021). *Community report on autism.*Autism and Developmental Disabilities Monitoring (ADDM) Network.

Copenhaver, A., & Tewksbury, R. (2019). Interactions between autistic individuals and law Enforcement: A mixed methods exploratory study. *American Journal of Criminal Justice, 44*, 309–333. https://doi.org/10.1007/s12103-018-9452-8

Crane, L., Maras, K. L., Hawken, T., Mulcahy, S., & Memon, A. (2016). Experiences of autism spectrum disorder and policing in England and Wales: Surveying police and the autism community. *Journal of Autism and Developmental Disorders, 46*, 2028–2041.

Debbaudt, D. (2002). *Autism, Advocates, and Law Enforcement Professionals: Recognizing and Reducing Risk Situations for People with Autism Spectrum Disorders*. Jessica Kingsley Publishers.

Debbaudt, D., & Rothman, D. (2001). Contact with individuals with autism: Effective Resolutions: *FBI Law Enforcement. Bulletin, 70*, 20–24.

Debbaudt, D. (2007). Autism spectrum and law enforcement training. In the best of the OARacle: A compilation of articles from 2002–2007. Retrieved from http://www.researchautism.org/resources/reading/documents/BestOfOARacle.pdf

Furfaro, H. (2018). Why police need training to interact with people on the spectrum. *Spectrum*. Retrieved January 4, 2022, from https://www.spectrumnews.org/features/deep-dive/police-need-training-interact-people-spectrum/.

Gardner, L., & Campbell, J. M. (2020). Law enforcement officers' preparation for calls involving autism: Prior experiences and response to training. *Journal of Autism and Developmental Disorders, 50*(12), 4221–4229. https://doi.org/10.1007/s10803-020-04485-5

Gardner, L., Campbell, J. M., & Westdal, J. (2019). Brief Report: Descriptive analysis of law enforcement officers' experiences with and knowledge of autism. *Journal of Autism and Developmental Disorders, 49*(3), 1278–1283. https://doi.org/10.1007/s10803-018-3794-4

Ghaziuddin, M., Tsai, L., & Ghaziuddin, N. (1991). Brief report: Violence in Asperger syndrome, a critique. *Journal of Autism and Developmental Disorders, 21*, 349–354. https://doi.org/10.1007/BF02207331

Hansen, S. N., Schendel, D. E., & Partner, E. T. (2015). Explaining the increase in the prevalence of autism spectrum disorders: The proportion attributable to changes in reporting practices. *JAMA Pediatrics, 169*(1), 56–62. https://doi.org/10.1001/jamapediatrics.2014.1893

Harrell, E. (2017). *Crime against persons with disabilities, 2009–2015—statistical tables*. U.S. Department of Justice.

Harrison, A. J., Bradshaw, L. P., Naqvi, N. C., Paff, M. L., & Campbell, J. M. (2017). Development and psychometric evaluation of the autism stigma and knowledge questionnaire (ASK-Q). *Journal of Autism and Developmental Disorders, 47*(10), 3281–3295. https://doi.org/10.1007/s10803-017-3242-x

Herbert, J., Pelletier, K., & Wallace, D. (2022). The informal, nonorganizational ways police officers receive training on encounters with autistic individuals. *Policing: An International Journal*, Vol. ahead-of-print No. ahead-of-print.

Hinkle, K. A., & Lerman, D. C. (2021). Preparing law enforcement officers to engage successfully with individuals with autism spectrum disorder: An evaluation of a performance-based approach. *Journal of Autism and Developmental Disorders*. https://doi.org/10.1007/s10803-021-05192-5

Hutson, T. M., McGhee Hassrick, E., Fernandes, S., Walton, J., Bouvier-Weinberg, K., Radcliff, A., & Allen-Handy, A. (2022). "I'm just different-that's all-I'm so sorry…": Black men, ASD and the urgent need for DisCrit Theory in police encounters. *Policing: An International Journal*, Vol. ahead-of-print No. ahead-of-print.

Law, P., & Anderson, C. (2011). IAN research report: elopement and wandering. Retrieved from http://www.iancommunity.org/cs/ian_research_reports/ian_research_report_elopement.

Love, A. M. A., Railey, K. S., Phelps, M., Campbell, J. M., Cooley-Cook, H. A., & Taylor, R. L. (2020). Preliminary evidence for a training improving first responder knowledge and confidence to work with individuals with autism. *Journal of Intellectual Disabilities and Offending Behavior, 11*(4), 211–219. https://doi.org/10.1108/JIDOB-04-2020-0007

Love, A. M. A., Railey, K. S., & Jones, C. P. (2022). Examining the sources of police confidence when working with autistic individuals. *Policing: An International Journal*, Vol. ahead-of-print No. ahead-of-print.

Masterton, C. (2018). *Autism and policing: Best practice in education and training*. Winston Churchill Memorial Trust.

Maxwell, A. (2022, May 9). I-TEAM: 8 months later, mother pushes for answers after non-verbal man was tasered by Georgia officers. *News4Jax*. https://www.news4jax.com/i-team/2022/05/09/i-team-8-months-later-mother-pushes-for-answers-after-non-verbal-man-was-tasered-by-georgia-officers/

Mayes, T. A. (2003). Persons with autism and criminal justice: Core concepts and leading cases. *Journal of Positive Behavior Interventions, 5*, 92–100. https://doi.org/10.1177/10983007030050020401

McGonigle, J. J., Migyanka, J. M., Glor-Scheib, S. J., Cramer, R., Fratangeli, J. J., Hegde, G. G., Shang, J., & Venkat, A. (2014). Development and evaluation of educational materials for pre-hospital and emergency department personnel on the care of patients with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 44*, 1252–1259. https://doi.org/10.1007/s10803-013-1962-0

Mesibov, G., & Sreckovic, M. (2017). Child and juvenile pornography and autism spectrum disorder. In L. Dubin & E. Horowitz (Eds.), *Caught in the web of the criminal justice system: Autism, developmental disabilities, and sex offenses* (pp. 64–93). Jessica Kingsley Publishers.

Mouridsen, S. E. (2012). Current status of research on autism spectrum disorders and offending. *Research in Autism Spectrum Disorders, 6*, 79–86. https://doi.org/10.1016/j.rasd.2011.09.003

Munn, Z., Peters, M. D. J., Stern, C., Tufanaru, C., McArthur, A., & Aromataris, E. (2018). Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. *BMC Medical Research Methodology, 18*(143), 1–7. https://doi.org/10.1186/s12874-018-0611-x

Murphy, V., Kelleher, M. J., & Gulati, G. (2017). Autism awareness training for An Garda Siochana (Letter to the Editor). *Irish Journal of Psychological Medicine, 35*, 345–346. https://doi.org/10.1017/ipm.2017.31

Petersilia, J. R. (2001). Crime victims with developmental disabilities: A review essay. *Criminal Justice and behavior, 28*, 655–694. https://doi.org/10.1177/009385480102800601

Railey, S., Love, A. M., & Campbell, J. M. (2020). A systematic review of law enforcement training related to autism spectrum disorder. *Focus on Autism and Other Developmental Disabilities, 35*(4), 221–233. https://doi.org/10.1177/1088357620922152

Rava, R., Shattuck, P., Rast, J., & Roux, A. (2017). The prevalence and correlates of involvement in the criminal justice system among youth on the autism spectrum. *Journal of Autism and Developmental Disorders, 47*, 340–346. https://doi.org/10.1007/s10803-016-2958-3

Shelton, J. F., Tancredi, D. J., & Hertz-Picciotto, I. (2010). Independent and dependent contributions of advanced maternal and paternal ages to autism risk. *Autism Research, 3*(1), 30–39.

Teagardin, J., Dixon, D. R., Smith, M. N., & Granpeesheh, D. (2012). Randomized trial of law Enforcement training on autism spectrum disorders. *Research in Autism Spectrum Disorders, 6*, 1113–1118. https://doi.org/10.1016/j.rasd.2012.02.002

Tint, A., Palucka, A. M., Bradley, E., Weiss, J. A., & Lunsky, Y. (2017). Correlates of police involvement among adolescents and adults with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 47*(9), 2639–2647. https://doi.org/10.1007/s10803-017-3182-5

Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., Moher, D., Peters, M. D. J., Horsley, T., Weeks, L., Hempel, S., Akl, E. A., Chang, C., McGowan, J., Stewart, L., Hartling, L., Aldcroft, A., Wilson, M. G., Garritty, C., & Straus, S. E. (2018). PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Annals of Internal Medicine, 169*(7), 467–473. https://doi.org/10.7326/M18-0850

Wallace, D., Herbert, J., Tyler, D., & McGee-Hassrick, E. (2021). Interactions between individuals on the autism spectrum and the police: The fears of parents, caregivers, and professionals. *Policing: A Journal of Policy and Practice, 15*(2), 950–964. https://doi.org/10.1093/police/paaa059

Woodbury-Smith, M., & Dein, K. (2014). Autism spectrum disorder and unlawful behavior: Where do we go from here? *Journal of Autism and Developmental Disorders, 44*, 2734–2741. https://doi.org/10.1007/s10803-014-2216-5

Article

A Systematic Review of Law Enforcement Training Related to Autism Spectrum Disorder

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Abstract

Although research confirms the effectiveness of training to improve law enforcement officers' (LEOs) awareness and knowledge of people with intellectual disability and learning disabilities, review of the efficacy of autism-specific law enforcement training is needed. To provide up-to-date information regarding training for LEOs related to autism spectrum disorder (ASD), a systematic review of the literature was conducted. Adhering to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Protocols (PRISMA), we conducted a search of 13 professional databases and 28 journals using search terms related to both ASD and law enforcement training. From 606 articles identified during the initial search, only two articles met inclusion criteria, which suggests that limited research exists that explores ASD and law enforcement training. Included studies were summarized in terms of participants as well as training format, content, and outcomes. Limitations of the current literature, directions for future research, and current implications for practice are discussed.

Keywords

autism spectrum disorder, intervention, personnel preparation

Beginning with the establishment of the Community Oriented Policing Services (COPS) model within the United States Department of Justice in 1994, law enforcement has placed greater emphasis on prevention, collaborative partnerships, and problem-solving (Bureau of Justice Assistance, 1994). Importantly, the COPS model encourages law enforcement officers (LEOs) to build relationships with all people in their communities, especially those who may differ physically, intellectually, emotionally, and socially from individuals without disabilities or mental health concerns (Price, 2005). In everyday interactions, LEOs routinely encounter people with a range of disabilities. In fact, one study found that 7% of all police contacts involve people with mental health needs (Deane et al., 1999). In addition, individuals with developmental disabilities are seven times more likely to interact with LEOs when compared to other citizens without disabilities (Curry et al., 1993; Organization for Autism Research, 2014). Given increased contact with persons with disabilities, LEOs are also more likely to interact with family members/caregivers, medical and psychiatric facilities, and outreach programs/non-profit organizations who support individuals with disabilities.

LEOs' Interactions With Individuals With Autism Spectrum Disorder

Although it is possible to address some of the characteristics of autism spectrum disorder (ASD) through generalized training on mental health or intellectual disability (ID), tailored trainings should address the unique challenges associated with ASD specifically. Rava et al. (2017) found that roughly 20% of individuals with ASD reported either being stopped or questioned by police at least once by the time they were in their mid-twenties. Although the prevalence of ASD involvement in the criminal justice system (CJS) is currently unknown (King & Murphy, 2014), research suggests that individuals with ASD are involved in interactions with LEOs as victims (Mayes, 2003) and suspects (Woodbury-Smith & Dein, 2014). In addition, researchers suggest that individuals with ASD who frequently exhibit unusual behaviors (e.g., hand flapping, pacing, self-harming) or elopement have higher chances of encountering LEOs and being arrested (Debbaudt & Rothman, 2001).

Many behaviors displayed by individuals with ASD can be misinterpreted by LEOs as challenging or disrespectful (Debbaudt & Rothman, 2001). Misinterpretations may contribute to the rising number of incidents involving individuals with disabilities and the CJS (Rava et al., 2017). For

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example, individuals with ASD may experience sensory issues (e.g., aversion to police lights and noises, aversion to being handcuffed) and difficulties communicating effectively to LEOs' questioning. Unfortunately, several encounters between LEOs and individuals with ASD have ended in negative outcomes such as arrest or death (Copenhaver & Tewksbury, 2019). Although it can be difficult for LEOs to quickly and accurately assess situations and take measures to protect themselves and others, the negative outcomes of these encounters highlight a need for LEOs to receive more ASD-specific training.

Gardner et al. (2019) found that 72.2% of LEOs reported no training for working with individuals with ASD. LEOs who had received training reported feeling better prepared to respond to calls involving individuals with ASD; however, outcomes (e.g., use of handcuffs) did not differ whether LEOs received training or not. Crane and colleagues (2016) found that LEOs identified time constraints and lack of training as barriers to providing adequate support to individuals with ASD in their roles as officers. Despite reporting that "understanding ASD" was one of the top two easiest aspects of policing related to ASD, only 48% of LEOs indicated that they felt well-equipped to serve individuals with ASD and 42% reported satisfaction in their dealings with the ASD community (Crane et al., 2016). Of concern, only 13% of caregivers of individuals with ASD reported "satisfactory" interactions between LEOs and their children with ASD. Moreover, only 15% of adults with ASD reported a "satisfactory" experience when describing interactions (Crane et al., 2016).

LEOs' Knowledge and Attitudes Toward Individuals With ASD

Despite known interactions between LEOs and persons with ASD, research suggests that LEOs are often not knowledgeable about ASD and report concerns about appropriately handling situations involving persons with ASD (Chown, 2009; Crane et al., 2016). To identify characteristics of ASD, it is essential that LEOs become aware of the range of behavior individuals with ASD may present. Modell and Mak (2008) surveyed 124 police officers in the United States and found that 80% were unable to identify defining features of ASD; 35% of the sample reported simply associating ASD with the film "Rain Man." A survey of LEOs in the United Kingdom found that officers rated their competence levels in providing support to individuals with ASD with an average of 2.63 (1 being least competent and 5 being most competent; Chown, 2009).

The lack of appropriate support to individuals with ASD by LEOs could potentially lead to emotional stress, breakdowns in communication abilities, and behavioral regulation difficulties. However, misinterpretation of behaviors during high-stress or tense situations can be improved with proper training, education, and through increasing interactions with persons with ASD in commonplace settings (Chown, 2009). In addition to simply interacting more frequently with individuals with disabilities, LEOs would benefit from increasing their knowledge regarding signs of mental illness and specific disabilities, appropriate interaction strategies and interventions, as well as the broader social systems which frame these interactions between LEOs and people with disabilities.

Training of LEOs Regarding Persons With ASD

As reviewed above, a lack of understanding of and training geared toward ASD is likely to result in inadequate support of individuals with ASD within law enforcement encounters. Given the various reports of negative interactions between LEOs and persons with ASD (Copenhaver & Tewksbury, 2019), formal training on how to recognize and respond to the needs of community members with ASD is needed. To this end, researchers have also called for specialized training in ASD to be developed after reviewing law enforcement training curriculum from seven states in the United States (Laan et al., 2013). Laan et al. (2013) suggest that training should focus on how to recognize signs of ASD and various techniques LEOs can use to support persons with ASD, especially effective communication tactics and strategies to manage crisis situations. However, the authors did not provide information regarding specific information to include and mechanisms to use when presenting trainings (Laan et al., 2013).

LEOs report that training may help them better manage emotional and behavioral reactions, sensory sensitivities, and communication needs of individuals with ASD (Crane et al., 2016). However, one study found that only 37% of LEOs had received training on ASD specifically, and over 25% of officers report dissatisfaction with training (Crane et al., 2016). In New Jersey, where the state mandated that all first responders receive ASD-specific training beginning in 2008, Kelly and Hassett-Walker (2016) found that a significant percentage of emergency personnel had not completed the mandatory training as of Fall 2014. New Jersey mandated that officers hired pre-2008 receive ASD training by 2011, and findings show that many pre-2008 LEOs had not accessed this training. Therefore, results of this study suggest that ASD-related training for first responders may be limited even when mandated by a state.

Purpose of the Review

A review of existing research suggests that law enforcement training on ASD appears limited; however, a comprehensive, systematic review of the current literature is needed to describe the state of research regarding ASD training for

LEOs. Although research confirms the effectiveness of training to improve LEOs' awareness and knowledge of people with ID (Bailey et al., 2001) and learning disabilities (McAllister et al., 2002), a review of the efficacy of autism-specific law enforcement trainings is needed. Thus, the purpose of the review is to provide up-to-date information regarding experimental/intervention-based studies that focus on LEO training to support individuals with ASD. The current systematic review has four purposes: (a) review content of autism-specific trainings for LEOs, (b) explore all outcomes of identified trainings, (c) highlight gaps in the current research body, and (d) provide implications for future practice and research.

Method

This study followed the five steps of systematic reviews proposed by Kahn et al. (2003), which are outlined below.

Framing Questions

In the *first step*, questions to be addressed in the review should be framed clearly and include specific outcomes. For this study, researchers sought to review and describe all studies that employed experimental designs to evaluate LEO training related to ASD.

Identifying Relevant Literature

In the *second step*, Kahn and colleagues (2003) suggest that researchers should set a priori study selection criteria that directly relate to the research questions. Prior to conducting the search, the first author developed a protocol adhering to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Protocols 2015 (PRISMA-P 2015; Moher et al., 2015). The protocol presented an explicit plan for the systematic review based on predefined eligibility criteria and a specific methodological and analytic approach. To identify a comprehensive list of published literature on LEO training and ASD, the first author performed a search of professional databases using the following keywords as search terms: (a) *autism* keywords: autis*, ASD, pervasive developmental disorder, Asperger, high functioning autism; (b) *officer* keywords: police officer, policing, law enforcement, sheriff, first responder; and (c) *training* keywords: training, professional development, education, professional training.

Search terms were combined (terms within groups combined with "OR," terms across groups combined with "AND"). The specified keywords and search process were identified via: (a) review of search terms in relevant published articles; (b) consultation with librarians from the three university-level librarians who specialize in public health, criminal justice, and education; (c) consultation with

a professor/researcher who specializes in ASD and has published systematic reviews; and (d) review of terminology used in organizations related to law enforcement and ASD.

The initial search was undertaken in March 2018, and a hand search of most recent issue of journals and review of citations was conducted in June 2018. No date restrictions were placed on the search, and studies were identified through a variety of methods. First, 13 databases related to criminal justice, social sciences, and education were searched using the keywords identified above. Second, the first author conducted a hand search of 28 journals related to ASD and the CJS. See Table 1 for a comprehensive list of databases and journals. Next, the first author conducted a search of the references in identified articles before completing a citation search of relevant articles to identify any additional articles.

Study eligibility. The "PICO" method, which defines the population, intervention, appropriate control or comparator, and outcomes of interest, was utilized when formulating the questions for the review (Moher et al., 2015). The process of clearly describing the inclusion criteria for each of the PICO elements guided the determination of study eligibility, data extraction, analysis, and interpretation of results. Articles were included if: (a) LEOs at any level of training were participants; (b) a training program focused on any topic related to ASD; (c) any type of training-related outcome was explored; (d) an experimental design (e.g., quantitative, qualitative, mixed-method) was utilized to analyze effects of training; (e) they were published in a peer-reviewed journal; and (f) they were published in English. Articles were included irrespective of the presence or absence of comparator or control groups, and no data restriction was placed on the search.

Articles were excluded for the following reasons: (a) only descriptive information provided (e.g., review articles) and did not include an autism-specific intervention component; (b) not peer-reviewed (e.g., dissertations, newspaper articles, blog articles, policy briefs, editorials); and/or (c) the intervention focused on disabilities (e.g., ID, learning disabilities, mental illnesses) and did not include information about ASD.

Study selection. The study selection process is presented in a PRISMA flow diagram (see Figure 1). First, two researchers (K.S.R. and A.M.A.L.) screened all title and abstracts independently to determine relevance for the review. Specifically, each author reviewed the information in the title and abstract that related to population, absence/presence of an intervention, appropriate control or comparator (if applicable), and outcomes of the study. Then, authors made independent decisions whether the article met inclusion criteria and did not meet exclusion criteria. The full-text papers of the remaining articles were further examined, and reviewers

Table 1. Journal and Databases Utilized in Search.

Databases (*n* = 13)	Journals (*n* = 28)
Academic Search Complete	*Autism*
Criminal Justice Abstracts	*Autism Research*
Criminal Justice Database	*Crime & Delinquency*
Cumulative Index to Nursing and Allied Health Literature	*Criminal Justice and Behaviour*
Education Resources Information Center	*Criminal Justice Ethics*
International Security and Counterterrorism Reference Center	*Criminal Justice Policy Review*
National Criminal Justice Reference Service Abstracts	*Criminology*
Nursing and Allied Health	*Criminology & Criminal Justice: An International Journal*
Psychology and Behavioral Sciences Collection	*Focus on Autism and Developmental Disorders*
PsycINFO	*Intellectual and Developmental Disabilities*
Scopus	*International Journal of Police Science & Management*
Social Science Database	*Journal of Autism and Developmental Disorders*
Web of Science Core Collection	*Journal of Contemporary Criminal Justice*
	Journal of Correctional Education
	Journal of Crime and Justice
	Journal of Criminal Justice
	Journal of Criminal Justice Education
	Journal of Global Intelligence & Policy
	Journal of Intellectual Disabilities and Offending Behaviour
	Journal of Intellectual Disability Research
	Journal of Police and Criminal Psychology
	Justice Quarterly
	Police Quarterly
	Policing & Society
	Psychology, Crime, & Law
	Psychology, Psychiatry, & Law
	Research in Autism Spectrum Disorders
	The Police Journal: Theory, Practice, and Principles

made study inclusion decisions per inclusion and exclusion criteria set a priori. While screening and reviewing citations of relevant studies, additional articles that met criteria were added to the finalized list. While completing a citation search of relevant articles, and more specifically while searching for publications that cited work done by Crane et al. (2016), the first author (K.S.R.) identified a relevant article by Murphy et al. (2017).

Assessing the Quality of Studies

In the *third step* of Kahn and colleagues' (2003) process, researchers should assess the quality of the studies using a critical appraisal guide and design-based quality checklists. Later, results of the quality appraisal indicators help describe strengths and weaknesses of studies as well as make recommendations for future research. In this study, researchers utilized the McMaster Quantitative Critical Appraisal Tool (Law et al., 1998) to appraise the identified studies. First, reviewers independently assigned a score on

each of the 15 domains (1 = *Yes*, 0 = *No or not addressed*). Authors adhered to guidelines set by Law et al. (1998) when making decisions regarding which score to assign. Then, agreement between both reviewers' scores was calculated and common methodological issues were noted.

Summarizing the Evidence

In the *fourth step*, Kahn and colleagues (2003) note that data from identified studies should be synthesized, and study characteristics should be tabulated into a pre-established protocol. In this study, data from identified studies were extracted independently by each of the reviewers and recorded on the pre-established data extraction protocol. The following information was summarized from each study: (a) publication demographics; (b) participant information; (c) summary of intervention; (d) details of control conditions, if present; and (e) description of study outcomes as well as overview of limitations and future directions.
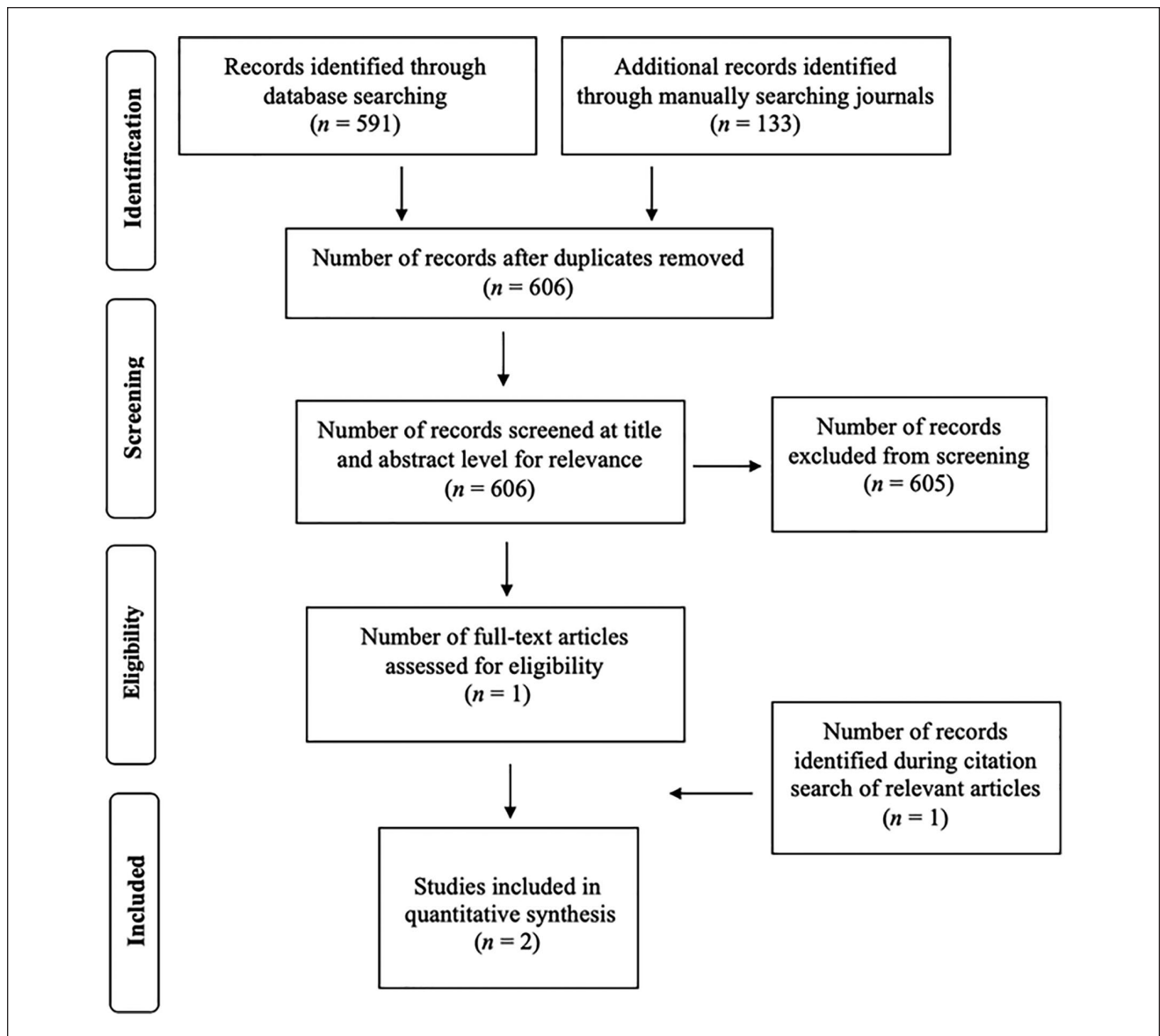
Figure 1. PRISMA flow diagram of the study selection process.
Note. PRISMA = Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

Interpreting the Findings

Finally, in the *fifth step* of Kahn and colleagues' (2003) process, the findings of the review should be discussed, and the quality of studies should be reviewed. For this study, researchers interpret the findings and review quality of the studies in the sections below.

Results

Initially, 724 articles were identified, though 606 remained after de-duplication. We removed duplicate articles reliably using the Rayyan® (Ouzzani et al., 2016) software. Only

one article remained after two researchers independently screened articles at the title and abstract level to ensure the study focused on ASD-specific interventions for LEOs (Teagardin et al., 2012), and one article was later identified when completing citation searches of relevant articles (Murphy et al., 2017). Thus, only two articles (Murphy et al., 2017; Teagardin et al., 2012) were included in the final quantitative synthesis. Throughout the article, the Murphy et al. (2017) article will be referred to as Study 1, and the Teagardin et al. (2012) article will be referred to as Study 2. See the PRISMA diagram in Figure 1 for an overview of the screening process. Researchers did not tally specific reasons for exclusion of studies; however, most

Table 2. Quality Scores for Critical Appraisal of Included Studies.

	Included studies	
Criterion	Murphy et al. (2017)	Teagardin et al. (2012)
1. Was the purpose clearly stated?	0	1
2. Was relevant background literature reviewed?	1	1
3. Was the study design described?	1	1
4a. Was sample described in detail?	0	0
4b. Was the sample size justified?	0	0
5a. Were the outcome measures reliable?	0	0
5b. Were the outcome measures valid?	0	0
6a. Was the intervention described in detail?	0	0
6b. Was contamination avoided?	0	0
6c. Was co-intervention avoided?	0	0
7a. Results were reported in terms of statistical methods?	1	1
7b. Were the analysis method(s) appropriate?	1	1
7c. Was clinical importance reported?	0	0
7d. Were dropouts reported?	0	1
8. Conclusions were adequate given the study methods and results?	1	1
Total score (/15)	5 (33.3%)	7 (46.7%)

Note. The key to scoring follows: 1 = *Yes*; 2 = *No or not addressed*. A maximum score of 15 could be allotted.

screened articles were excluded because the articles examined the interface of the CJS and other disorders, were not empirical studies, and/or did not evaluate LEO training specific to ASD.

Reliability During Study Selection Process

During the study selection process, two researchers independently screened articles. Inter-rater reliability was calculated in the following two ways to examine agreement between authors: (a) percentage of agreement and (b) *kappa*. In both the title/abstract screening and the full-text review phases, percentage of agreement between researchers was 100% and *kappa* was 1.0. After identifying the Murphy et al. (2017) article, two researchers (K.S.R. and J.M.C.) reviewed the full-text article and agreed that that the study met inclusion criteria.

Critical Appraisal for Bias of Included Studies

Two raters independently completed the McMaster Quantitative Critical Appraisal Tool (Law et al., 1998) while reviewing each of the two included studies. Each reviewer assigned a score of either 1 or 0 (1 = *Yes*; 0 = *No or not addressed*) for all 15 domains. See Table 2 for total score and summary of each article. There was 100% agreement between the scores of the two reviewers (K.S.R. and A.M.A.L.) for both articles. Common methodological problems for both studies were related to inadequate description and justification of sample size, limited psychometric description of outcome measures, limited description of

intervention, and insufficient reporting about the avoidance of contamination and co-intervention.

Study Demographic Information

Both studies were conducted within the last decade in Ireland (Study 1) and the United States (Study 2; see Table 3). Study 1 employed a quasi-experimental pretest–posttest design without a control group while Study 2 conducted an experimental randomized, waitlist-controlled design. Additional information regarding data on the PICO constructs is provided.

Population. Both studies were similar in terms of participant recruitment. Specifically, participants were recruited from relatively homogeneous groups of police officers. All participants in Study 1 were police officers working for Ireland's National Police Service while a variety of law enforcement personnel from patrol officers to detectives were included in Study 2. Participant demographics were not described in detail for either study, and background information such as age or ethnicity was not provided. To participate in Study 2, individuals were excluded from the study if they had a family member or close relative with ASD. The sample sizes of both studies were small, ranging from 11 (Study 1) to 82 (Study 2) participants.

Intervention. In Study 1, a 90-min ASD awareness training was conducted by a consultant psychiatrist with experience in diagnosis and treatment of ASD through the Continuous Professional development unit in the county headquarters

Table 3. Summary of Main Findings.

Characteristic	Study 1 Murphy et al. (2017)	Study 2 Teagardin et al. (2012)
Country	Ireland	United States
Study design	Quasi-experimental; pretest–posttest design	Experimental; Randomized, waitlist-controlled design
Training aims	Evaluation of a 90-min training on autism awareness delivered by psychiatrist	Evaluation of 13-min training video titled "Law Enforcement: Your Piece to the Autism Puzzle," by the Sahara Cares Foundation in 2008
Target group	Police officers in An Garda Síochána, Ireland's National Police Service	"In the field" officers, including patrol officers and detectives, from Ventura County Law Enforcement Department who spoke English without family member or close relative with ASD.
Training format	Not provided. Requested in October 2018	The training consisted of educational video about ASD. The following topics are covered: definition and key characteristics of ASD, how to identify individuals with ASD, and how to appropriately support people with ASD
Group size	11 officers; no control group	42 LEOs in training; 40 LEOs in control; cohorts randomly assigned
Training duration	90-min in-person training	13-min video training
Training content	Not provided. Requested in October 2018	Video begins with a caregiver searching for her son with ASD. A detective who is the Crisis Intervention Training Program Director in Utah then discussed symptoms of ASD as well as strategies to respond to people with ASD. Video presents facts about ASD, including the prevalence rate, and includes three LEOs whose sons have ASD
Training evaluation	Pretest and posttest survey with five items using Likert scales on a scale of 1 to 10 (1 = *no*; 10 = *yes*) administered immediately before and after training	Pretest and posttest surveys utilized. A 12-item questionnaire: 10 knowledge questions and two questions to assess participants' level of confidence interacting with people with ASD
Training outcomes	Self-reported understanding of ASD improved significantly between pretest ($M = 4.9$) and posttest ($M = 7.9$). Officers' awareness of difficulties experienced by people with ASD significantly improved between pretest ($M = 4.7$) and posttest ($M = 8.3$). Self-reported confidence around use of effective communication strategies improved significantly between pretest ($M = 4.7$) and posttest ($M = 8.3$). Self-reported confidence on approaching individuals experiencing a "meltdown" improved significantly from pretest ($M = 4.0$) to posttest ($M = 8.8$)	Significant improvements in knowledge of ASD based on changes in pretest ($M = 29\%$) to posttest ($M = 53\%$) for the training group For control group, scores on the outcome measure only improved between the second pretest ($M = 19\%$) to the posttest ($M = 47\%$) Self-reported confidence in identifying people with ASD improved after the training ($t = 4.28$, $p < .001$). Self-reported confidence in interacting with people with ASD improved ($t = 2.48$, $p = .15$)*
Constructs measured	Self-reported understanding of ASD and confidence	Self-reported knowledge of ASD and confidence in identifying and interacting with people with ASD
Limitations	Small sample size; lack of demographic information provided; limited description of training format or content; no control group; limited description of evaluation instruments; lack of behavioral outcome measure (only self-report)	Only one law enforcement department included; participant information not provided; no analysis of behavioral outcomes; lack of standardization of outcome measure and no discussion of how 10 knowledge items were created
Suggestions for future training	None provided	Video training alone may not be sufficient. Training length should be increased beyond 13 min. Authors suggest practical implementation of trainings should be considered

Note. ASD = autism spectrum disorder.
*Authors report a *p*-value of .15 and interpret this as significant.

of the An Garda Síochána in Cork, Ireland. Information regarding the content and format of the training were requested from the authors but were not available upon publication of this manuscript. In Study 2, the intervention consisted of a 13-min educational video about ASD created by the Sahara Cares Foundation. The video reviews the definition of key characteristics of ASD as well as provides a general overview regarding how to identify and support individuals with ASD.

Comparator/control. Study 1 did not include a control group. Study 2 included a control group and treatment group. Due to practical limitations, random assignment occurred at the cohort level such that all participants who signed up to attend a training on the same day were treated as a single cohort. Participant cohorts were then randomly assigned to either the control ($n = 40$) or treatment group ($n = 42$). Participants in the control group received the training shortly after the treatment group.

Outcome measures. Both studies evaluated the effect of ASD-specific trainings on knowledge of ASD and confidence in identifying and supporting individuals with ASD. In both studies, training evaluation measures were developed by the researchers. Study 1 used five self-report items, using a scale with 10 points of agreement, that were collected twice via pretest and posttest surveys. Participants answered five questions designed to measure awareness of ASD and confidence in approaching individuals experiencing a "meltdown" and utilizing communication strategies with individuals with ASD. One item measured perceived helpfulness of the training. Psychometric information was not provided, and the items were examined independently rather than as one complete measure. In Study 2, researchers developed a 12-item measure with 10 questions related to knowledge of persons with ASD and two questions related to level of confidence in identifying and interacting with persons with ASD. The 10 knowledge items were examined together as a mean percentage correct score for both the pretest and posttest, and the two questions related to self-reported confidence were assessed independently using dependent samples *t*-tests to compare pretest and posttest ratings.

Main Findings

Table 3 provides a summary of the included studies in terms of (a) country, (b) study design, (c) target group, (d) training format, (e) group size, (f) training duration, (g) training content, (h) training evaluation, (i) training outcomes, (j) constructs measured, (k) limitations, and (l) suggestions for future training. The studies reported statistically significant improvements in participants' self-reported awareness of ASD and confidence in supporting individuals with ASD

(Study 1) as well as knowledge of ASD and confidence in identifying and interacting with people with ASD (Study 2).

Discussion

To provide up-to-date information regarding ASD-specific training for LEOs, the first author conducted a search of 13 databases and 28 journals that cover topics related to criminal justice, psychology, public health, and education. Two researchers independently reviewed articles during all steps of the screening process to determine article eligibility based on inclusion and exclusion criteria set a priori. Despite a thorough literature review, the first author identified only two studies that evaluated ASD-specific training for LEOs. Main findings of the review, limitations, and recommendations for future research are outlined below.

Summary and Implications of Main Findings

Overall, one of the major findings of the review is the scarcity of research concerning ASD-specific trainings for LEOs. Only two articles describing 93 participants and two different interventions met the inclusion criteria, which were purposefully broad to capture as many studies as possible. Even though no date restrictions were placed on the search, both studies were published within the last decade. Specifically, Teagardin and colleagues (2012) published the first intervention study in the United States whereas Murphy and Peers (2017) conducted a more recent study in Ireland. The present findings suggest that ASD-specific interventions have potential benefits; however, it is difficult to evaluate effectiveness given limitations of both studies.

A second finding of this review involves the exploration of research methodologies found in the literature on ASD-specific training for LEOs. Out of the two identified articles, only one study (Teagardin et al., 2012) utilized a randomized, waitlist-controlled design and included a control group; however, randomization occurred at a cohort level, as officers in attendance on a particular day were treated as a single cohort. Murphy and colleagues (2017) utilized a cross-sectional, pretest–posttest design and included only 11 LEOs from the same cohort. A major limitation of both studies involves the inclusion of a small sample with participants who may be biased in their responses. For example, it is important to note how participants were selected, whether the sample was representative of the larger departments, and prior experiences of LEOs who participated. Not only do both studies include small sample sizes, but little information is provided about participant demographics and selection, which raises concerns about participant self-selection bias given that participants may have chosen to participate due to a strong interest in ASD (Nabatchi, 2012). Teagardin and colleagues (2012) stated that they excluded LEOs if they had a family member of close relative with ASD given that

prior knowledge of ASD may result in participant bias. Future research should consider the background of participants such as prior relationship and training related to ASD. In addition, collecting participant demographic information would allow for exploration of additional descriptive differences between groups.

In both studies, researchers developed outcome measures to reflect information obtained during their respective trainings. Outcomes relied on self-report measures, and psychometric information on the measures was not provided to assess reliability and validity. Murphy and colleagues (2017) utilized four self-report items that were designed to measure awareness of ASD, confidence around communication strategies, and confidence in approaching individuals experiencing a meltdown as well as one item that assessed helpfulness of the training. The other group of researchers (Teagardin et al., 2012) included 10 items related to LEOs' knowledge of ASD and two items measuring participants' level of confidence in identifying and interacting with individuals with ASD; however, authors did not include the measure within the published article or discuss the factor structure of the knowledge section.

Although it is important for training to improve participants' knowledge of ASD and confidence in interacting with individuals with ASD, incorporation of behavioral outcome measures would strengthen research into the effectiveness of ASD-specific trainings for LEOs. Researchers have proposed the following outcome measures when measuring the effectiveness of LEOs' training programs focused on mental health disorders that could be applied to ASD-specific training: (a) number of *use of force* occurrences during certain calls (e.g., involving individuals with ASD), (b) supervisor ratings of empathic communication, (c) satisfaction measures of individuals of interest (e.g., individuals with ASD) that interacted with LEOs, (d) satisfaction measures of community and mental health services that interact with LEOs, (e) number of arrests compared to total number of interactions with certain population (e.g., individuals with ASD), and (f) number of injuries during interaction between LEOs and individuals with disabilities (Krameddine et al., 2015). Empirical evidence does not yet connect the possession of knowledge of ASD with improvements in LEOs' behaviors during interactions with the ASD community; thus, behavioral change outcome measures should be utilized to evaluate training effectiveness. An essential step in measuring behavior change is to investigate and understand the behavior from the perspective of LEOs who will be expected to change their own behaviors after participating in the training.

Training facilitators may also consider including direct observations of LEOs during real-life interactions with individuals with ASD (via observation or body camera footage) as a potential behavioral outcome measure. After observing these encounters, a variety of individuals (e.g., supervisors, mental health providers, persons with ASD) could provide feedback on LEOs' behaviors and responses, and LEOs may also benefit from self-evaluations after watching interactions as this may increase their awareness of how they approach certain encounters. In addition to the need to incorporate behavioral outcomes, longitudinal research should also be conducted to allow for exploration of the long-term effects on LEOs' attitudinal and behavioral changes. Longitudinal studies may help training developers and implementers identify when to provide follow-up trainings based on when LEOs begin to lose knowledge and skills over time.

Another major finding in this review relates to the training content and format in the two identified studies. Despite statistically significant improvements in self-reported knowledge of ASD in one study (Teagardin et al., 2012), participants' scores on the posttest remained low for both the control and training groups (47% and 53%, respectively). These low scores may be related to the fact that the intervention solely involved a 13-min video that provided a general overview on how to identify and support individuals with ASD. Some disability sensitivity training programs for students and professionals have reported trainings that last between 8 (Shields & Taylor, 2014) and 12 weeks (Morgan & Lo, 2013). One training for LEOs that focused on anti-stigma and mental illness lasted 3 weeks (Hansson & Markström, 2014) while one of the newest training models to support interactions between LEOs and persons with mental illness, the Crisis Intervention Team (CIT) model, consists of a 40-hr course for LEOs (Thompson & Borum, 2006). Given the range in durations of similar trainings, it is important to consider the appropriate length to ensure that the ASD-specific training is effective while remaining considerate LEOs' time and other demands.

Although posttest scores remained fairly low in Teagardin and colleagues' (2012) study, it is promising to learn that LEOs' knowledge of ASD improved with a brief, video-only intervention. This is especially important given that law enforcement departments require LEOs to receive training on a variety of topics, from tactical skills to traffic laws. Thus, the need to focus on such a large amount of content may limit the time that LEOs can participate in a training solely related to ASD. Despite the need to receive a training on a vast number of topics, LEOs would benefit from ASD-specific training given that 20% of individuals with ASD report interactions with LEOs by the time they reach their mid-twenties (Rava et al., 2017). Providing ASD-specific training is likely to decrease the likelihood of negative outcomes during interactions between LEOs and individuals with ASD, which benefits both law enforcement departments and the ASD community.

Although the training provided in the study by Murphy and colleagues (2017) was longer than a 13-min video, limited information about the training format and content was

provided outside of the training duration of 90 min in length. In addition, authors note that the training content focused on awareness of ASD, communication strategies, and management of individuals engaging in "meltdowns" (Murphy et al., 2017) with no discussion of their training approach. Given the effectiveness of active engagement in learning (Dunst et al., 2010) and its focus in the andragogical approach, Dunst and Trivette's (2009) Participatory Adult Learning Strategy (PALS) is a useful adult training model to inform autism-specific law enforcement trainings. In a meta-analysis on the PALS model, Dunst and colleagues (2010) found that the following adult learning characteristics were associated with the largest mean effect sizes (shown in parentheses): (a) identifying personalized training goals (1.27), (b) self-assessing strengths and weaknesses (0.94), (c) applying concepts to "real-life" (0.94), (d) role-playing "real-life" scenarios (0.86), and (e) completing a standards-based assessment (0.86).

When considering results from Teagardin and colleagues' (2012) research, low posttest knowledge scores may be attributed, at least in part, to the fact that effective adult learning strategies were not incorporated into the 13-min video training. Knowledge of these effective characteristics (Dunst et al., 2010) can inform further training efforts, and future research should continue to examine the influence of various active ingredients in effective ASD-specific training. Regarding ASD training, role-play scenarios and examples of how knowledge of ASD can be applied directly to LEOs' work would be beneficial. Research suggests that LEOs also prefer videos and small-group discussion when asked about preferred format for training related to mental illness (Vermette et al., 2005). It is also important for LEOs to receive feedback after they participate in role-play activities and engage in discussion (Silverstone et al., 2013). In addition, LEOs would benefit from engagement in a self-assessment process and reflection on their experiences and knowledge to continue the application of the new information and skills.

Future ASD-specific trainings should consider the benefits of incorporating aspects of the CIT training model given its didactic, experiential, and practical training format. Like the format of the CIT model, ASD-specific trainings should focus on the inclusion of community providers, family members, and individuals with ASD as well as collaboration with mental health providers and other community stakeholders (Compton et al., 2010; Thompson & Borum, 2006). Given findings that ASD-specific trainings for LEOs have the potential to improve knowledge of ASD and increase LEOs' confidence in interacting with people with ASD (Murphy et al., 2017; Teagardin et al., 2012), practitioners and researchers should continue to explore and identify which training components, characteristics, and modalities are most effective.

Educational Implications

According to the *National Association of School Resource Officers* (NASRO), school-based policing is the fastest growing area of law enforcement (NASRO, n.d.) and, although our review did not include school-based officers, we believe that the findings of this research directly apply to this unique category of LEOs. School staff members, including administrators, therapists, school psychologists, and other personnel, frequently rely on school resource officers (SROs) to keep students and staff safe as well as to address challenging behavior (e.g., aggression, elopement, self-injurious behavior, making threats) that students with and without disabilities engage in within school settings. The *Safe and Drug Free Schools and Communities Act* (SDFSCA) encourages SROs to focus on the development and expansion of justice initiatives for all students, and SRO programs are typically grounded in community- and problem-oriented policing with an emphasis on prevention strategies (Development Services Group, Inc., 2010; SDFSCA, 2004). To promote justice for all students and to implement preventive solutions, it is important that SROs understand the unique needs of students with disabilities, including those with ASD. However, little information is known about SROs' knowledge of disabilities and effective implementation of disability- and ASD-specific training for SROs.

Findings from a review of 22 court decisions related to SROs' interactions with students with disabilities suggest that a significant number of incidents resulted in SROs using excessive force when the students' behavioral concerns were often related to their disability (Zirkel, 2019). Another study found that 84.8% of SROs reported that they "somewhat agreed" that students with disabilities used their special education status as an excuse for their behavioral difficulties and to avoid taking responsibility for their actions (May et al., 2012). Given these findings and schools' adherence to zero tolerance policies, school systems may be at risk for disproportionately suspending or even arresting students with disabilities, whose actions may be a manifestation of their disability. In fact, the U.S. Department of Education has found that students with disabilities were arrested at a rate of 29 per 10,000 students, which is approximately three times higher than their typically developing peers (U.S. Department of Education, 2019). SROs are uniquely positioned to obstruct the school-to-prison pipeline for students with disabilities given that they are mandated to comply with federal special education laws and to consider the individual needs of students during their interactions with students receiving special education services. Although the literature is limited, what we do know suggests that SROs would benefit from specific training in strategies to support students with ASD.

Currently, national standards outlining training requirements for SROs does not exist (Ryan et al., 2018). Although

the American Civil Liberties Union recommended that SROs should receive training on strategies to support students who display social communication and behavioral differences, a review of curriculum suggests that most SRO training typically centers around juvenile justice codes and legal issues rather than focusing on behavior management, child and adolescent development, and effective de-escalation and communication techniques (Whitaker et al., 2019). This lack of standardized training in disabilities is especially concerning given that many students receiving special education services, including those with ASD, have specific behavioral intervention plans that schools are required to follow to optimize students' educational success. Research has also identified gaps in SRO training related to disabilities. Specifically, one study found that over half of SROs had not received either academic training (58.8%) or in-service training (56.5%) related to special education and strategies to support students with disabilities (May et al., 2012). Without appropriate training on the nature of disabilities, including ASD, it is likely that SROs may not be well-equipped to support the needs of students with disabilities using individualized, appropriate strategies. Our review revealed no published evaluations of ASD training for SROs; however, we believe our general recommendations and approaches to training apply to this group of LEOs.

Future Research

Given the scarcity of identified research and methodological limitations of the included studies, future research is warranted. Although this study focused on training reports from academic sources, it may be helpful to also review training reports that are described in state/municipal government reports, department training bulletins, and other similar sources. In addition, future researchers should utilize random sampling of participants and adequate sample sizes that include unbiased participants. To examine differences across cultural contexts and geographical locations, studies should be conducted in the United States and other countries as law enforcement department may differ for a variety of reasons. Both studies identified in the review are cross-sectional in nature, which suggests the need for longitudinal studies to evaluate changes over time. There is a need for researchers to explore which training characteristics and modalities are most effective to inform future training development. For example, researchers could investigate the effectiveness of video- or online-only versus in-person trainings. Further examination of the design and utilization of reliable, valid measures to evaluate outcomes would be useful. Finally, outcome measures should include direct behavioral outcomes in addition to investigating self-reported changes in knowledge, attitudes, and/or intentions.

Given the small yield of articles focused on LEO interventions from a larger corpus of research (i.e., 2 of 607 articles), we began implementation of a scoping review of the literature that examines various aspects of ASD and the larger CJS. In our focused review of LEO training, we identified numerous articles from the group of 606 that pertain to ASD-CJS interactions and are organizing these into a coherent scoping review of the literature (Railey et al., 2020). To date, we have organized articles into several themes that pertain to many aspects of ASD-CJS interaction, from initial encounter with LEOs to ASD experiences of long-term incarceration.

Strengths and Limitations of the Review

The overall approach to this review was strengthened by the development of an a priori protocol and adherence to the PRISMA guidelines (Moher et al., 2015). An additional strength included the fact that key terms were broad, and no date restrictions were placed on the search. Only one study (Murphy et al., 2017) was found by hand-searching reference lists and conducting citation searches, which indicates that the original search was reliable in targeting relevant papers. Another strength of the study involves the collaboration of three researchers during the search and eligibility decision process. Specifically, two researchers made independent decisions regarding inclusion of articles, which resulted in a percentage of agreement between researchers of 100% during both the screening and eligibility phases.

Despite strengths of the current review, findings are limited to the search terms, databases, and journals included in the process. Although several librarians and ASD researchers were involved in selecting key terms and search engines, it is possible that not all available research was identified. In addition, the two included studies varied in the standards with which they were conducted and reported; therefore, findings are a direct reflection of methodological limitations of the included studies.

Conclusion

Research suggests that several encounters between LEOs and members of the ASD community have resulted in a variety of outcomes, including arrest or death (Copenhaver & Tewksbury, 2019). The potentially negative consequences of these interactions highlight the need for LEOs to receive specialized training in autism, which focus on identification of characteristics of ASD and engagement in strategies to support people with ASD. Despite the need for ASD-specific training for LEOs, the present comprehensive search of literature identified only two studies that empirically investigated effects of law enforcement trainings related to ASD. The two studies varied in their methodological approaches and outcomes; however, both studies utilized only short-term

knowledge and attitudinal measures and included potentially bias, small sample sizes. Although both studies provide promising results (Murphy et al., 2017; Teagardin et al., 2012), the review highlights the need for more empirical evidence to establish effective training protocols for teaching LEOs to support people with ASD. Findings from this study serve as a steppingstone to understanding available literature and act as a catalyst for further research in this area.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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References

Bailey, A., Barr, O., & Bunting, B. (2001). Police attitudes toward people with intellectual disability: An evaluation of awareness training. *Journal of Intellectual Disability Research*, *45*, 344–350. https://doi.org/10.1046/j.1365-2788.2001.00339.x

Bureau of Justice Assistance. (1994). *Understanding community policing: A framework for action*. https://www.ncjrs.gov/pdffiles/commp.pdf

Chown, N. (2009). "Do you have any difficulties that I may not be aware of?" A study of autism awareness and understanding in the UK police service. *International Journal of Police Science & Management*, *12*, 256–273. https://doi.org/10.1350/ijps.2010.12.2.174

Compton, M. T., Broussard, B., Hankerson-Dyson, D., Krishan, S., Steward, T., Oliva, J. R., & Watson, A. C. (2010). System- and policy-level challenges to full implementation of the Crisis Intervention Team (CIT) model. *Journal of Police Crisis Negotiations*, *10*, 72–85.

Copenhaver, A., & Tewksbury, R. (2019). Interactions between autistic individuals and law enforcement: A mixed-methods exploratory study. *American Journal of Criminal Justice*, *44*, 309–333. https://doi.org/10.1007/s12103-018-9452-8

Crane, L., Maras, K., Hawken, T., Mulcahy, S., & Memon, A. (2016). Experiences of autism spectrum disorder and policing in England and Wales: Surveying police and the autism community. *Journal of Autism and Developmental Disorders*, *46*, 2028–2041. https://doi.org/10.1007/s10803-016-2729-1

Curry, K., Posluszny, M., & Kraska, S. (1993). *Training criminal justice personnel to recognize offenders with disabilities*. Office of Special Education and Rehabilitative Services. https://www.ncjrs.gov/pdffiles1/Digitization/142440NCJRS.pdf

Deane, M. W., Steadman, H. J., Borum, R., Veysey, B. M., & Morrissey, J. P. (1999). Emerging partnerships between mental health and law enforcement. *Psychiatric Services*, *50*, 99–101. https://doi.org/10.1176/ps.50.1.99

Debbaudt, D., & Rothman, D. (2001). Contact with individuals with autism: Effective resolutions. *FBI Law Enforcement Bulletin*, *70*, 20–24.

Development Services Group, Inc. (2010). *Community- and problem-oriented policing: A literature review*. Office of Juvenile Justice and Delinquency Prevention. https://www.ojjdp.gov/mpg/litreviews/Community_and_Problem_Oriented_Policing.pdf

Dunst, C. J., & Trivette, C. M. (2009). Let's be PALS: An evidence-based approach to professional development. *Infants & Young Children*, *27*, 164–176. https://doi.org/10.1097/iyc.0b013e3181abe169

Dunst, C. J., Trivette, C. M., & Hamby, D. W. (2010). Meta-analysis of the effectiveness of four adult learning methods and strategies. *International Journal of Continuing Education and Lifelong Learning*, *3*, 91–112. http://hdl.voced.edu.au/10707/41

Gardner, L. B., Campbell, J. M., & Westdal, J. (2019). Descriptive analysis of law enforcement officers' experiences with and knowledge of autism. *Journal of Autism and Developmental Disorders*, *49*, 1278–1283. https://doi.org/10.1007/s10803-018-3794-4

Hansson, L., & Markström, U. (2014). The effectiveness of an anti-stigma intervention in a basic police officer training programme: A controlled study. *BMC Psychiatry*, *14*, Article 55. https://doi.org/10.1186/1471-244X-14-55

Kahn, K. S., Kunz, R., Kleijnen, J., & Antes, G. (2003). Five steps to conducting a systematic review. *Journal of the Royal Society of Medicine*, *96*, 118–121.

Kelly, E., & Hassett-Walker, C. (2016). The training of New Jersey emergency service first responders in autism awareness. *Police Practice and Research*, *17*, 543–554. https://doi.org/10.1080/15614263.2015.1121390

King, C., & Murphy, G. H. (2014). A systematic review of people with autism spectrum disorder and the criminal justice system. *Journal of Autism and Developmental Disorders*, *44*, 2717–2733. https://doi.org/10.1007/s10803-014-2046-5

Krameddine Yasmeen, I., & Silverstone, P. H. (2015). How to improve interactions between police and the mentally ill. *Frontiers in Psychiatry*, *5*, Article 186. https://doi.org/10.3389/fpsyt.2014.00186

Laan, J. M., Ingram, R. V., & Glidden, M. D. (2013). Law enforcement training on mental disorders and autism spectrum disorders in the southeastern United States. *Journal of Global Intelligence & Policy*, *6*(10), 51–67.

Law, M., Stewart, D., Pollock, N., Letts, L., Bosch, J., & Westmorland, M. (1998). *Guidelines for critical review form: Quantitative studies*. McMaster University.

May, D. C., Rice, C., & Minor, K. I. (2012). An examination of school resource officers' attitudes regarding behavioral issues among students receiving special education services. *Current Issues in Education*, *15*, 1–13. https://cie.asu.edu/ojs/index.php/cieatasu

Mayes, T. A. (2003). Persons with autism and criminal justice: Core concepts and leading cases. *Journal of Positive Behavior Interventions*, *5*, 92–100. https://doi.org/10.1177/10983007030050020401

McAllister, A., Bailey, A., & Barr, O. (2002). Training in joint investigation of alleged crimes against people with learning disabilities in Northern Ireland. *The Journal of Adult*

Protection, *4*, 21–27. https://doi.org/10.1108/14668203200
200012

Modell, S. J., & Mak, S. (2008). A preliminary assessment of police officers' knowledge and perceptions of persons with disabilities. *Intellectual and Developmental Disabilities*, *46*, 183–189. https://doi.org/10.1352/2008.46:183-189

Moher, D., Shamseer, L., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., . . . Stewart, L. A. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews*, *4*, 1.

Morgan, P. E., & Lo, K. (2013). Enhancing positive attitudes towards disability: Evaluation of an integrated physiotherapy program. *Disability and Rehabilitation*, *35*, 300–305. https://doi.org/10.3109/09638288.2012.691941

Murphy, V., Kelleher, M. J., & Gulati, G. (2017). Autism awareness training for An Garda Siochana (Letter to the Editor). *Irish Journal of Psychological Medicine*, *35*, 345–346. https://doi.org/10.1017/ipm.2017.31

Nabatchi, T. (2012). Putting the "public" back in public values research: Designing participation to identify and respond to values. *Public Administration Review*, *72*, 699–708. https://doi.org/10.1111/j.1540-6210.2012.02544.x

National Association of School Resource Officers. (n.d.). https://nasro.org/

Organization for Autism Research. (2014). *Life journey through autism: A guide to safety*. https://researchautism.org/wp-content/uploads/2016/03/A_Guide_to_Safety.pdf

Ouzzani, M., Hammady, H., Fedorowicz, Z., & Elmagarmid, A. (2016). Rayyan – a web and mobile app for systematic reviews. *Systematic Reviews*, *5*, 210. https://doi.org/10.1186/s13643-016-0384-4

Price, M. (2005). Commentary: The challenge of training police officers. *The Journal of the American Academy of Psychiatry and the Law*, *33*, 50–54.

Railey, K. S., Love, A. M. A., & Campbell, J. M. (2020). A scoping review of autism spectrum disorder and the criminal justice system. *Review Journal of Autism and Developmental Disorders*. Advanced online publication. https://doi.org/10.1007/s40489-020-00203-0

Rava, R., Shattuck, P., Rast, J., & Roux, A. (2017). The prevalence and correlates of involvement in the criminal justice system among youth on the autism spectrum. *Journal of Autism and Developmental Disorders*, *47*, 340–346. https://doi.org/10.1007/s10803-016-2958-3

Ryan, J. B., Katsiyannis, A., Counts, J. M., & Shelnut, J. C. (2018). The growing concerns regarding school resource officers. *Intervention in School and Clinic*, *53*, 188–192. https://doi.org/10.1177/1053451217702108

Safe and Drug-Free Schools and Communities Act. (2004). 20 U.S.C. § 7114

Shields, N., & Taylor, N. F. (2014). Contact with young adults with disability led to a positive change in attitudes toward disability among physiotherapy students. *Physiotherapy Canada*, *66*, 298–305. https://doi.org/10.3138/ptc.2013-61

Silverstone, P. H., Yasmeen, I., Krameddine, B., DeMarco, D., & Hassel, R. (2013). A novel approach to training police officers to interact with individuals who may have a psychiatric disorder. *The Journal of the American Academy of Psychiatry and the Law*, *41*, 344–355. https://doi.org/10.3389/fpsyt.2013.00009

Teagardin, J., Dixon, D. R., Smith, M. N., & Granpeesheh, D. (2012). Randomized trial of law enforcement training on autism spectrum disorders. *Research in Autism Spectrum Disorders*, *6*, 1113–1118. https://doi.org/10.1016/j.rasd.2012.02.002

Thompson, L. E., & Borum, R. (2006). Crisis Intervention Teams (CIT): Considerations for knowledge transfer. *Law Enforcement Executive Forum*, *6*, 25–36.

U.S. Department of Education. (2019). *2015-2016 civil rights data collection* [Data file]. https://ocrdata.ed.gov/

Vermette, H. S., Pinals, D. A., & Applebaum, P. S. (2005). Mental health training for law enforcement professionals. *The Journal of the American Academy of Psychiatry and the Law*, *33*, 42–46.

Whitaker, A., Torres-Gullién, S., Morton, M., Jordan, H., Coyle, S., Mann, A., & Sun, W. (2019). *Cops and no counselors: How the lack of school mental health staff is harming students*. American Civil Liberties Union. https://www.aclu.org/issues/juvenile-justice/school-prison-pipeline/cops-and-no-counselors

Woodbury-Smith, M., & Dein, K. (2014). Autism spectrum disorder and unlawful behavior: Where do we go from here? *Journal of Autism and Developmental Disorders*, *44*, 2734–2741. https://doi.org/10.1007/s10803-014-2216-5

Zirkel, P. A. (2019). School resource officers and students with disabilities: A disproportional connection? *Exceptionality: A Special Education Journal*, *27*, 299–314. https://doi.org/10.1080/09362835.2019.1579725