Preliminary evidence for a training improving first responder knowledge and confidence to work with individuals with Autism

Abigail M.A. Love, Kirsten S. Railey, Marissa Phelps, Jonathan M. Campbell, Heidi A. Cooley-Cook and R. Larry Taylor

Abstract

Purpose – *The purpose of this paper is to investigate outcomes associated with a training designed to improve interactions between first responders and individuals with autism spectrum disorder (ASD).*

Design/methodology/approach – *Authors examined the responses of a group of first responders (N = 224) who completed a survey before and after a training to assess their (a) knowledge of ASD, (b) confidence for working with individuals with ASD, (c) comfort responding to a call and (d) ratings of the training they received.*

Findings – *Findings indicated first responders demonstrated more knowledge of ASD, increased confidence for working with individuals with ASD and improved comfort when responding to a call.*

Research limitations/implications – *This preliminary report serves as initial evidence of the importance of rigorous work examining trainings designed to improve interactions between first responders and individuals with ASD.*

Practical implications – *The results of this study justify continued rigorous research on the effectivness of ENACT, as a training designed to improve knowledge and comfort of first responders who work with individuals with ASD.*

Originality/value – *This study fills an identified need for research on trainings designed to educate first responders about ASD.*

Keywords *Knowledge, Training, Autism, First responders, Law enforcement, Criminal justice system*

Paper type *Research paper*

Abigail M.A. Love, Kirsten S. Railey and Marissa Phelps are all based at the Department of Educational, School and Counseling Psychology, University of Kentucky, Lexington, Kentucky, USA. Jonathan M. Campbell is based at the Department of Psychology, Western Carolina University, Cullowhee, North Carolina, USA. Heidi A. Cooley-Cook and R Larry Taylor are both based at the College of Education and Human Development, University of Louisville, Louisville, Kentucky, USA.

Accoording to the US Bureau of Justice Statistics (2017), the rate of violent victimization against persons with disabilities was 2.5 times higher than the rate for individuals without disabilities (Harrell, 2017). Research suggests that individuals with disabilities are seven times more likely to interact with law enforcement officials than neurotypical peers (Debbaudt and Rothman, 2001; Henshaw and Thomas, 2012), and a recent study found that one in five youth with Autism Spectrum Disorder (ASD) was stopped and questioned by the police before the age of 21 (Rava *et al.*, 2017). Despite these interactions, results from the field suggest that first responders lack knowledge of ASD and report concerns regarding how to handle situations appropriately involving individuals with ASD. These concerns may lead to problematic interactions between first responders (e.g. police officers, paramedics) and individuals with ASD (Chown, 2009; Crane *et al.*, 2016).

An article from Phoenix, AZ, on September 19, 2017, detailed an incident in which a police officer detained an individual with ASD because he misinterpreted his behaviors and

believed the individual's rigid and unfamiliar movements were a sign of drug intoxication. The officer's bodycam captured upsetting footage of the exchange between the officer and individual, and the family released photos of the boy's injuries from the brief detainment (Helsel, 2017). Unfortunately, this incident is not an anomaly (Copenhaver and Tewksbury, 2019). Without appropriate training in how to identify and properly respond, first responders may misinterpret the behaviors of individuals with ASD. To address this need, investigators designed a training to improve first responders' knowledge and confidence to work with individuals with ASD.

Research on individuals with ASD and their interactions with first responders are limited, but research has identified a need for training and education. Railey et al. (2019) recently published a qualitative study examining these interactions from the perspective of adults with ASD, caregivers of individuals with ASD, and law enforcement officers. The results of the study were clear in identifying a need for training specific to working with individuals with ASD to prevent misinterpretations of behaviour of individuals with ASD. Modell and Mak (2008) surveyed 124 police officers in the USA and found that 80% of the officers were unable to identify defining features of ASD. Further, 35% of the sample reported associating ASD with the film Rain Man. Chown (2009) noted anecdotal evidence suggesting persons with ASD are the subject of discrimination by law enforcement officials due to a "general lack of awareness and understanding of autism and its implications in this context" (p. 257). An additional study examined the viewpoints of individuals with ASD and found 69% of the participants in their study reported unsatisfactory experiences with police officers (Crane et al., 2016). Similarly, Kelly and Hassett-Walker (2016) conducted an evaluation of New Jersey's first responders including police officers, firefighters and EMS personnel and found the majority of first responders were not trained in how to respond to calls involving individuals with ASD. Finally, Gardner et al. (2019) published a descriptive analysis of the experiences of first responders with persons with ASD and noted the importance and need of formalized training in ASD for law enforcement officers.

Despite the conclusive results identifying a need for training, evidence-based studies that analyze the effectiveness of training designed to improve first responders' interactions with persons with ASD are scarce (Gardner et al., 2019). Results of a recent systematic review of empirical research focused on ASD-specific training for officers found that only two previous studies empirically explored a training specific to ASD for police officers (Railey et al., 2020). In addition to these two studies focused on police officers, a third study examined training materials for emergency department personnel (McGonigle et al., 2014). One study was conducted in the USA and used a randomized, waitlist-controlled, between-groups design with 82 participants (Teagardin et al., 2012). Findings indicated that the training, a 13-min educational video, increased officers' confidence to identify and interact with individuals with ASD as well as improved officers' knowledge of ASD. Although individuals in the training group earned a higher knowledge score than those who were not trained, neither group earned satisfactory knowledge scores (i.e. posttest scores were ~50%). Police officers in both groups failed to demonstrate a high posttest score on the questionnaire designed to measure knowledge of ASD, which suggests they may not have mastered the training material. This is an important finding and the authors suggested that the training modality, a brief video, may not have been effective in helping officers achieve mastery of the material. The authors suggested that "traditional in person training may better facilitate learning as compared to video training alone" (p. 1117). In addition to an in-person training, the authors suggested that the use of a more psychometrically sound measure of knowledge may have resulted in different conclusions.

The second identified study was conducted in Ireland and used a cross-sectional, pretest-posttest design with 11 officers in the same cohort (Murphy et al., 2018). Results of the study indicated that officers' self-reported understanding of ASD and confidence around communication and behavioral support strategies improved after they participated in the

intervention. Despite promising results of initial studies, the scarcity of research related to ASD-specific training for first responders suggests that future research is warranted.

Finally, McGonigle and colleagues (2014) explored the development of educational materials for emergency department personnel about individuals with ASD. The authors designed an intervention that used a manual, DVD, and presentation to training participants about ASD. Authors recruited participants (N = 110) from three different conferences for emergency medical technicians. Participants answered questions at two time points about their knowledge of ASD and their comfort for caring for persons with ASD. Results of this study confirmed a significant increase in the amount of knowledge and comfort for working with individuals with ASD following the training.

To this end, the primary aim of this study was to evaluate the initial effectiveness of ENACT (Emergency Network Autism Community Training). This study focused on four measures of preliminary effectiveness:

- first responders' knowledge of ASD;

- their self-reported confidence for working with individuals with ASD;

- participants' comfort responding to a call with a person with ASD; and

- overall satisfaction with the training.

Methods

Participants

First responders (N = 224) completed a survey before and after a training to assess their:

- knowledge of autism;

- confidence for working with individuals with autism;

- comfort responding to a call with someone with ASD; and

- consumer ratings of the training they received.

First responders were 76.3% male, 81.3% White or Caucasian, with a mean age of 38 years (SD = 13.07). First responders came from a variety of professional roles including policing (44.2%), corrections (22.8%) and firefighting (16.5%). See Table 1 for additional demographic information.

Measures

Knowledge

To evaluate first responders' knowledge of ASD, participants completed ten items that assessed knowledge of ASD. The items were adapted from the Autism Stigma and Knowledge Questionnaire (ASK-Q) to document autism-related knowledge (Harrison et al., 2017). During pilot stages of ENACT, the full survey was in use; however, to accommodate the first responders we were training, we made the decision to limit the questionnaire from 49 to 10 items to prioritize time for training. The items were chosen based on discussion and review by the authors and police officers that served as expert reviews. In addition, we included one question (i.e. "Please rate your knowledge of ASD") to assess participants overall self-rated knowledge of ASD before and after the training. The ASK-Q consists of statements that are endorsed as "True" or "False" and responses are scored as correct or incorrect. The single item assessing self-rated knowledge of ASD used a five-point Likert-type response format ranging from 1 (very little knowledge about autism) to 5 (very familiar).

Table 1 Description of study participants

Police officer characteristics	Participants (N = 224) Frequency (%)
Gender	
Male	171 (76.3)
Female	53 (23.7)
Education	
High school diploma	86 (38.4)
GED (high school equivalency certificate)	4 (1.8)
Associate's degree	38 (17.0)
Bachelor's degree	62 (27.7)
Master's degree	8 (3.6)
Doctoral degree (PhD)	1 (0.4)
Other	22 (9.8)
Missing	3 (1.3)
Ethnicity/race	
White	182 (81.3)
Latino or Hispanic	3 (1.3)
American Indian or Alaska Native	1 (0.4)
Asian or Asian American	1 (1.4)
Black or African American	27 (12.1)
Two or more races	5 (2.2)
Other	1 (0.4)
Missing	4 (1.8)
Professional role as a first responder	
Police officer	99 (44.2)
Paramedic	1 (0.4)
Corrections officer	51 (22.8)
Deputy	12 (5.4)
Firefighter	37 (16.5)
Other	19 (8.5)
Multiple	4 (1.8)
Missing	1 (0.4)

Confidence

To assess confidence in working with individuals with ASD, first responders completed one item that read, "How confident do you feel about working with individuals with autism in your community?" Participants responded using a five-point Likert-type response format ranging from 1 (*not confident*) to 5 (*very confident*).

Comfort

To understand participants' comfort in responding to a call with an individual with ASD, participants answered one item that read, "Please rate your comfort level of responding to a call and interacting with an individual with autism." Participants responded on a five-point Likert-type response format ranging from 1 (*not comfortable)* to 5 (*very comfortable*).

Quality of training

Finally, ratings of the training were assessed with three items analyzing participant perceptions of the training. Training expectations ("Did the training meet your expectations"), helpfulness ("Was the training helpful") and clarity ("Did you find the

information clear") were analyzed. Participants responded to all three items using a five-point Likert-type response format ranging from 1 (*lowest)* to 5 (*highest*).

Training

The intervention used in this study, ENACT, is a two-hour, in-person first responder training developed collaboratively through partnerships with stakeholders and the authors of this study. ENACT is based on an intervention called Police Autism Community Training (PACT), which was a training specifically designed for police officers (Love, 2018). The authors of this study expanded PACT to ENACT in order to meet the needs of more first responders in their community. To create the PACT, a team of stakeholders was assembled including parents and family members of individuals with ASD, researchers who specialized in the field of ASD, members of a local autism community group, and police officers. The training was built based on current research-based evidence about ASD, and in response to the needs of police officers. The goal of the training was not to ensure officers became experts in ASD, but that they gained strategies to recognize ASD and gathered strategies to support individuals in their community with ASD. Informal pilot trainings were conducted with both urban and rural law enforcement officials to refine the aspects of the training and intervention. During the pilot phase of the program, the authors gathered informal, anecdotal data that suggested that the intervention increased communication and visibility between officers and community members and decreased the likelihood of miscommunication during a crisis. PACT was adapted into ENACT when the group was approached by additional first responders including paramedics and firefighters. Both trainings have similar material; however, ENACT includes strategies that are relevant to first responders beyond individuals in the policing profession. The training, or more details regarding the training, can be requested by contacting the first author.

The two-hour ENACT training includes a traditional in-service professional development workshop for first responders that consists of a lecture component, a group discussion and short videos (Table 2). The trainer provides the direct lecture component. Video clips are used throughout the presentation to visually support content provided within the direct lecture. Group discussions are scheduled throughout the lecture to allow officers to think about scenarios and engage in discussions with a partner regarding possible solutions to the applied scenario. The lecture slides associated with the training can be provided upon request.

Table 2 Components of the emergency network autism community training (ENACT)

Component	Duration	Description
Direct lecture	85 min	The majority of the intervention includes a direct lecture component where the trainer delivers a PowerPoint to the participants
Paired discussion	20 min	Paired discussion allows first responders to think individually about scenarios and discuss the topics/questions with partners. At the end of the discussion, groups share their ideas with the larger group
Video clips	5 min	Video clips are used throughout to demonstrate topics within the direct lecture
Questions and open discussion	10 min	At the end of the lecture, the trainer leads an open discussion about personal experiences, questions, and scenarios that the first responders would like to discuss. This gives first responders an opportunity to apply their learning to future challenges and/or dilemmas

Notes: ENACT is a training designed to educate first responders to better respond to and support individuals with ASD. Slides used during the lecture component are available upon request

Results

Pre-test to post-test knowledge

Participants' knowledge improved $t(197) = 6.96$, $p < 0.001$, from pretest ($M = 8.94$, $SD = 1.07$) to posttest ($M = 9.45$, $SD = 0.72$) (Table 3). Participants' self-rated knowledge about ASD significantly improved, $t(214) = 18.38$, $p < 0.001$, from pretest ($M = 2.75$, $SD = 1.23$) to posttest ($M = 4.17$, $SD = 0.66$) (Table 4).

Pre-test to post-test confidence

Participants' self-rated confidence in responding to a call involving an individual with ASD significantly improved, $t(210) = 11.06$, $p = 0.001$, from pretest ($M = 3.59$, $SD = 1.05$) to posttest ($M = 4.21$, $SD = 0.75$).

Pre-test to post-test comfort

Participants' self-rated comfort level in responding to a call involving an individual with ASD significantly improved, $t(213) = 9.46$, $p < 0.001$, from pretest ($M = 3.66$, $SD = 1.07$) to posttest ($M = 4.24$, $SD = 0.72$) (Table 4).

Consumer satisfaction ratings

Participants also responded to three items regarding their impressions of the training using a five-point scale with 1 reflecting the lowest rating and 5 reflecting the highest rating. Participants endorsed the training favorably, indicating that the training met their expectations ($M = 4.61$, $SD = 0.61$), was helpful ($M = 4.70$, $SD = 0.60$), and information was presented clearly ($M = 4.72$, $SD = 0.58$).

Table 3 Knowledge of autism item statistics ($N = 224$)

Item[a]	Pretest		Posttest	
	M	SD	M	SD
1. I have heard of autism	1.00	0.04	1.00	0.00
2. Some children with autism do not talk	0.90	0.31	0.98	0.15
3. Many children with autism have trouble tolerating loudnoises or certain types of touch	0.97	0.17	0.99	0.11
4. Children with autism can grow up to liv independently	0.93	0.27	0.95	0.22
5. All children with autism usually have problems with aggression	0.70	0.46	0.64	0.48
6. Autism affects people of all races and ethnicities	0.99	0.12	1.00	0.06
7. Many children with autism show the need for routines and sameness	0.96	0.19	0.99	0.11
8. Most children with autism may not look at things when you point at them	0.79	0.43	0.92	0.28
9. Many children with autism have difficulty using everyday language to communicate their needs	0.88	0.38	0.97	0.19
10. Autism is something that is very rare	0.84	0.37	0.86	0.36
Total score [b]	8.97	1.01	9.36	0.78

Notes: [a] = Items scores are percentage of sample answering correctly with 1.00 indicating 100 percent; [b] = Total score is number of correct from 10 items

Table 4 Participant knowledge confidence and comfort ($N = 224$)

Item	Pretest M	SD	Posttest M	SD
Please rate your knowledge of autism	2.76	1.23	4.17	0.66
Please rate your comfort level of responding to a call and interacting with an individual with autism	3.67	1.07	4.24	0.72
How confident do you feel about working with individuals with autism in your community?	3.60	1.05	4.22	0.75

Note: Item responses range from $1 - 5$, with 1 being the lowest and 5 being the highest

Discussion

Limited knowledge of ASD and lack of ASD-specific training for community professionals, including law enforcement officers and other first responders, has been identified as a significant area of concern (Gardner *et al.*, 2019; Harrison *et al.*, 2017). This preliminary report serves as the catalyst for more rigorous studies that address limitations in first responders' knowledge of ASD. Increased knowledge of ASD can help to decrease the misinterpretations that can occur when first responders are unaware of this diagnosis. First responders with limited knowledge of defining ASD characteristics and strategies to support individuals with ASD could misinterpret the behaviors of individuals with ASD as threatening, related to drugs or alcohol or as mental illness.

First responders' knowledge, confidence and comfort in responding to calls improved from pretest to posttest, and first responders responded favorably to the ENACT training session. The current study offers initial support for the usefulness of an intervention aimed to improve relationships between community first responders and individuals with ASD by providing education to first responders on ASD and providing them with strategies to help encourage positive interactions. Findings from the study address the lack of training that first responders receive regarding their work with unique populations like ASD and provide proactive solutions.

The initial results of the present study are promising but serve only as preliminary evidence for the successfulness of the training. The pre-post design is a major limitation, and results should only be interpreted as groundwork for more rigourous studies on the effectiveness of ENACT. Future research examining the ENACT program, and other first responder training programs, should include a comparison group to determine the effectiveness of the training, and more rigorous study design including randomization of participants to better understand the impact of training. Future research is needed to establish answers regarding which active ingredients of the training, such as the delivery method (e.g. face-to-face versus online) and instructor influence (e.g. personal connection to ASD, expert in ASD), are most influential and effective. Teagardin *et al.* (2012) demonstrated the positive effects of one law enforcement training using a randomized, waitlist-controlled, between-groups design. Results indicated that police officers who received the training reported more knowledge of ASD and higher confidence for working with individuals with ASD. However, Teagardin *et al.* (2012) also reported a lack of mastery of knowledge of ASD. Although individuals in the training group did have a higher knowledge score than those who were not trained, neither group earned satisfactory knowledge scores. Police officers in both groups failed to demonstrate a high posttest score on the questionnaire designed to measure knowledge of ASD. This is an important finding and the authors suggested that the training modality, a brief video, may not have been effective in helping officers achieve mastery of the material. In addition to an in-person training, the authors suggested that the use of a more psychometrically sound measure of knowledge may have resulted in different conclusions.

In addition, future studies should incorporate behavioral outcome measures to investigate the effectiveness of ASD-specific training for first responders. Previous research suggests that the following behavioral outcome measures may be useful:

(a) number of "*use of force*" occurrences during calls involving individuals with ASD; (b) supervisor ratings of first responders' communication and behaviors during ASD-related calls; (c) number of arrests compared to total number of interactions with individuals with ASD; and (d) number of injuries during interactions with the ASD community (Krameddine and Silverstone, 2015).

In addition to behavioral outcomes, it will be important to measure both short- and long-term outcomes that relate to ENACT. This will be possible through rigorous, longitudinal research where the lasting benefits of the training can be determined. Gibbs and Haas (2020) note

that many police trainings are short one-time trainings, so it will be important to not only identify the short- and long-term benefits of these trainings, but also the mechanisms of change once more rigorous evidence supports the intervention.

This study offers an intervention that may help to improve relationships between community first responders and individuals with ASD. In a study that gained insight from individuals with ASD and their family members regarding their interactions with police in Australia, Gibbs and Haas (2020) concluded that participants needed "to be confident that police have a solid knowledge and understanding of autism if they are to feel safe to disclose their autism diagnosis and thus receive the supports that they may need" (p. 12). It is important that all first responders are able to identify whether individuals have ASD to recognize the need to use more supportive strategies during their interactions with members of the ASD community. Findings from the current study directly address the gap in the literature related to ASD-specific training for first responders. Results also highlight the need to provide proactive solutions to prevent negative interactions between first responders and the ASD community.

References

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 and Management*, Vol. 12 No. 2, pp. 256-273, doi: 10.1350/ijps.201 0.12.2.174.

Copenhaver, A. and Tewksbury, R. (2019), "Interactions between autistic individuals and law enforcement: a mixed-methods exploratory study", *American Journal of Criminal Justice*, Vol. 44 No. 2, pp. 309-333, doi: 10.1007/s12103-018-9452-8.

Crane, L., Maras, K., Hawken, T., Mulcahy, S. and 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*, Vol. 46 No. 6, pp. 2028-2041, doi: 10.1007/s10803-016-2729-1.

Debbaudt, D. and Rothman, D. (2001), "Contact with individuals with autism", *FBI Law Enforcement Bulletin*, Vol. 70, pp. 20-24, doi: 10.1037/e312842004-005.

Gardner, L.B., Campbell, J.M. and Westdal, J. (2019), "Descriptive analysis of law enforcement officers' experiences with and knowledge of autism", *Journal of Autism and Developmental Disorders*, Vol. 49 No. 3, pp. 1278-1283, doi: 10.1007/s10803-018-3794-4.

Gibbs, V. and 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*, doi: 10.1007/s1083-020-04510-7.

Harrell, E. (2017), "Crime against persons with disabilities, 2009-2015 Statistical tables", *US Department of Justice, Office of Justice Programs, Bureau of Justice Statistics*., retrieved from bjs.gov.

Harrison, A.J., Bradshaw, L.P., Naqvi, N.C., Paff, M.L. and Campbell, J.M. (2017), "Development and psychometric evaluation of the autism stigma and knowledge questionnaire (ASK-Q)", *Journal of Autism and Developmental Disorders*, Vol. 47 No. 10, pp. 3281-3295, doi: 10.1007/s10803-017-3242-x.

Helsel, P. (2017), "Parents demand answers after autistic boy held on ground by office", NBC News, available at: www.nbcnews.com/news/us-news/parents-demand-answers-after-autistic-boy-held-ground-officer-n802801

Henshaw, M. and Thomas, S. (2012), "Police encounters with people with intellectual disability: prevalence, characteristics and challenges", *Journal of Intellectual Disability Research*, Vol. 56 No. 6, pp. 620-631, doi: 10.1207/S15328007SEM1001_6.

Kelly, E. and Hassett-Walker, C. (2016), "The training of New Jersey emergency service first responders in autism awareness", *Police Practice and Research*, Vol. 17 No. 6, pp. 543-554.

Krameddine, Y.I. and Silverstone, P.H. (2015), "How to improve interactions between police and the mentally ill", *Frontiers in Psychiatry*, Vol. 5, pp. 1-5, doi: 10.3389/fpsyt.2014.00186.

Love, A.M.A. (2018), "PACT: police autism community training", available at: www.pactautism.com/ (accessed 3 April 2020).

McGonigle, J.J., Migyanka, J.M., Glor-Scheib, S.J., Cramer, R., Fratangeli, J.J., Hegde, G.G. and 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*, Vol. 44 No. 5, pp. 1252-1259.

Modell, S.J. and Mak, S. (2008), "A preliminary assessment of police officers' knowledge and perceptions of persons with disabilities", *Intellectual and Developmental Disabilities*, Vol. 46 No. 3, pp. 183-189.

Murphy, V., Kelleher, M.J. and Gulati, G. (2018), "Autism awareness training for an Garda Siochana (letter to the editor)", *Irish Journal of Psychological Medicine*, Vol. 35 No. 4, pp. 345-346, doi: 10.1017/ipm.2017.31.

Railey, K.S., Bowers-Campbell, J., Love, A.M. and Campbell, J.M. (2019), "An exploration of law enforcement officers' training needs and interactions with individuals with autism spectrum disorder", *Journal of Autism and Developmental Disorders*, Vol. 50 No. 1, pp. 101-117, doi: 10.1007/s10803-019-04227-2.

Railey, K.S., Love, A.M.A. and Campbell, J. (2020), "A systematic review of law enforcement officer training related to autism spectrum disorder", *Focus on Autism and Other Developmetnal Disabilities*.

Rava, R., Shattuck, P., Rast, J. and 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*, Vol. 47 No. 2, pp. 340-346, doi: 10.1007/s10803-016-2958-3.

Teagardin, J., Dixon, D.R., Smith, M.N. and Granpeesheh, D. (2012), "Randomized trial of law enforcement training on autism spectrum disorder", *Research in Autism Spectrum Disorders*, Vol. 6 No. 3, pp. 1113-1118, doi: 10.1016/j.rasd.2012.02.002.

Corresponding author

Abigail M.A. Love can be contacted at:love.abigail.a2@gmail.com