POLICE PRACTICE AND RESEARCH, 2016
VOL. 17, NO. 6, 543–554
http://dx.doi.org/10.1080/15614263.2015.1121390

Routledge
Taylor & Francis Group

The training of New Jersey emergency service first responders in autism awareness

Edward Kelly and Connie Hassett-Walker

Department of Criminal Justice, Kean University, Union, NJ, USA

ABSTRACT

This study investigated the extent and adequacy of training among New Jersey first responders (e.g. police, firefighters, emergency medical technicians) specifically as relates to a 2008 state law mandating that autism and hidden disability recognition and response training be conducted. The results show that a significant percentage of emergency service personnel have not completed the state mandated training. Recommendations for improving the training, such as by involving parents, advocates, and field and training personnel as a part of the training process, are discussed.

ARTICLE HISTORY
Received 11 September 2014
Accepted 4 October 2015

KEYWORDS
Police; emergency responders; training; disabilities; autism

Introduction

Autism is a developmental disorder that presents as a group of conditions or behaviors that may cause an individual to be socially and behaviorally challenged in society (The Senate and General Assembly of the State of New Jersey, 2008). This group of special needs individuals is at greater risk for wandering, abduction, child abuse/domestic violence and general victimization because of their behavioral and communication deficits (Anderson et al., 2012; Crary, 2013; Debbaudt, 2002; Goodman, 2014). Therefore, these individuals require special attention from first responders.

Children in New Jersey have a higher rate of autism than their peers nationwide. Current data from the Centers for Disease Control and Prevention (CDC) put the rate of autism for New Jersey – 1 in 45 children – higher than the national average of 1 in 68 children. In recognition of the prevalence of autism, New Jersey legislators proposed and ratified a bill requiring that police, fire and emergency medical service (EMS) personnel be trained in autism awareness. In 2008, then Governor Jon Corzine signed into law that autism awareness education would become mandatory as a part of basic and in-service training for police officers, firefighters and emergency medical technicians (EMTs).[1] (See Chapter 80 of the New Jersey Revised Statutes Title 26 and 52 (2008), paragraph C26:2-190, paragraphs C52:27D-25jj and C52:17B-71.9.) First responders hired prior to 2008 were required to be similarly trained within three years from the point of the law's passage. Bearing in mind the potential hazardous conditions that exist (e.g. possible physical confrontations) not only for the autistic or otherwise disabled individuals but for the first responders themselves; legislation and training of this type requires constant monitoring, evaluation, and revision (Teagardin, Dixon, Smith, & Granpeesheh, 2012).

CONTACT Edward Kelly kellyedw@kean.edu

This study was previously presented at the February 2014 conference of the Academy of Criminal Justice Science in Philadelphia, Pennsylvania, USA. This study was supported by Kean University's Students Partnering with Faculty (SpF) summer research program, as well as the National Institute On Drug Abuse of the National Institutes of Health under Award Number R15DA032875. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

This study evaluated the current level of training regarding autism awareness among emergency service personnel in the State of New Jersey. Additionally, it assessed the perceptions and attitudes about the training currently implemented, as perceived by chief executives and training officers of police, fire and EMS agencies. The Principal Investigator (PI) for this study has recently retired after a career spanning thirty-plus years in municipal law enforcement and was a State of New Jersey-certified EMT for twenty-five years. During this time, the PI participated in the training function of both of these emergency service groups. Additionally, he is the father of a teenage son with autism.

While the present study took place in New Jersey, the findings are important for a broader, global audience – particularly those individuals who read *Police Practice and Research.* Researchers, practitioners, policy makers, and policing students need to know about myriad issues pertaining to autism; including best practices in first responder training. Autism is a worldwide issue. The advocacy group Autism Speaks has launched a global autism public health initiative in 42 countries around the world. Beyond US-based research, autism studies have focused on populations in the United Kingdom (Chown, 2009); Australia (Henshaw & Thomas, 2012); South Korea (Grinker & Cho, 2013); and Israel (Matson et al., 2011). The issues discussed in the present study speak to a larger audience.

Literature review

When assessing the literature regarding autism and awareness training, it is apparent that few scholarly research studies have been conducted that specifically target the training of emergency service personnel (Teagardin et al., 2012). A recent study by McGonigle et al. (2014) is an exception to this. Much of the scholarly literature published regarding autism has addressed prevalence, treatment and education of individuals with this developmental disability.

Much of the literature specifically published regarding autism awareness training and first responders has been presented in the form of trade journal articles. These articles provide anecdotal information regarding the need for educating emergency responders and checklists of provider interventions to be utilized during emergency operations, but they do not offer statistical evaluation of current training efforts.

One recent example was published in the trade journal *New Jersey COPS*, highlighting the training provided by the New Jersey State Policeman's Benevolent Association (PBA) at their April, 2013 meeting (Krugel, 2013). This article vividly describes how many of the police officers felt there was a dire need for such training and concluded by listing important bullet points with information that could assist personnel during interaction with autistic individuals (Krugel, 2013). Although not recent, groundbreaking work by Debbaudt and Rothman (2001) was published in the *FBI Law Enforcement Bulletin*. The article succinctly defined autism and its behavioral indicators, as well as actions to be taken by law enforcement when contacting these individuals (Debbaudt and Rothman, 2001; Holmes, 2013).

Subsequently, Debbaudt (2002) authored a book expanding on his ideas. He designates actions for law enforcement professionals, and discusses concerns of advocates such as parents, educators and caregivers (Debbaudt, 2002; Holmes, 2013). Debbaudt (2002) provides detailed insight into interaction with autistic individuals by describing recognition and response, interview and interrogation, and victims. Most importantly, he suggests one-on-one interaction between officers and individuals with autism (Debbaudt, 2002; Holmes, 2013).

Publicity is an important part of autism awareness endeavors, with the media (i.e., print, Internet and broadcast) playing a vital role in disseminating information regarding autism. In New Jersey's state newspaper *The Star-Ledger*, Haydon (2013) describes a training session provided to law enforcement officials in Union County, New Jersey by former county Prosecutor Theodore Romankow. Among the presenters was Dennis Debbaudt, the author cited above, who provided information regarding incidents involving autism and advice aimed at preventing tragic outcomes (Haydon, 2013). Many unfortunate incidents befall those afflicted by autism; one of the most difficult to prevent is escape from home or school (Crary, 2013). The reality of this risk was underscored by the 2013 tragic case of Avonte Oquendo, an autistic teenager who wandered away from his New York school mid-day without being stopped by any staff, only to be found dead months later (Goodman, 2014). Individuals with

autism spectrum disorder (ASD) may also present at times with challenging or chronic behaviors that get them on the radar of law enforcement, who may (mis)interpret their actions as potentially criminal (King & Murphy, 2014).

Many scholarly works investigate attitudes, perceptions or emotions that police experience regarding contact with the mentally ill or disabled (Alicea & Panzarella, 1997; King & Murphy, 2014; Litzcke, 2006; Modell & Cropp, 2007; Modell & Mak, 2008). While similarities can be drawn between mental illness and autism, the two conditions are not identical. Although the National Alliance on Mental Illness (NAMI, n.d.) lists autism among the conditions classified as mental illnesses, autism is not a mental illness according to The *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) (American Psychiatric Association, 2013). Rather, it is widely considered among health care professionals to be a developmental disability and, as such, requires separate training and awareness programs. Additionally, no autism researcher working in the field regards autism as a mental illness.

Chown (2009) investigated the level of training and responsiveness to individuals with autism by police personnel in the United Kingdom (UK). The current study seeks to accomplish a similar goal by measuring the effectiveness of and compliance with current training standards employed in New Jersey. Unlike other States, New Jersey has not limited the training requirement to police personnel. It has expanded the mandated training to all emergency service providers (Litzcke, 2006; Modell & Cropp, 2007; Modell & Mak, 2008; New Jersey Revised Statutes, 2008).

Chown (2009) points out that contact with the police or the criminal justice system is typically not seen as pleasant by anyone, much less a person with a developmental disability. Additionally, events considered benign or exciting to non-autistic persons, such as visits to a fire department, could develop into a negative experience for individuals with autism because of the sensory stimuli involved.

Modell and Mak (2008) evaluated US police officers' level of competence and knowledge regarding persons with disabilities. The authors concluded that although personnel had been trained in recognition, response is not only difficult but a skill which degrades over time. Although many officers and most likely other emergency service workers will perceive themselves as proficient in situations with the developmentally disabled, they may not be as capable as they think they are (Chown, 2009; Modell & Mak, 2008). Relatedly, Henshaw and Thomas (2012) investigated the difficulty among Australian police in differentiating the Intellectually Disabled (ID) from the mentally ill. The authors note overconfidence among police personnel when dealing with the ID population (Henshaw & Thomas, 2012).

A recent US-based study (McGonigle et al., 2014) describes the development of an ASD training manual and accompanying DVD featuring case examples, targeted at EMS personnel and emergency nurses over the course of several training sessions. The authors report a significant pre- to post-improvement in both knowledge and comfort level among participants regarding future interactions with autistic individuals.

The prevalence of autism among the population of these three countries (United States, United Kingdom, and Australia) is significant to the point of requiring decisive action (Chown, 2009; Henshaw & Thomas, 2012; Modell & Mak, 2008). Police contact with developmentally disabled individuals requires specialized, diverse and repetitive training such as scenario-based and in-person training with the developmentally disabled to produce a successful outcome (Chown, 2009; Debbaudt, 2002; Henshaw & Thomas, 2012; Holmes, 2013; Modell & Mak, 2008). Police attitudes toward autism and developmental disabilities must evolve and become more sensitive to the needs of this population and their caregivers (Chown, 2009; Henshaw & Thomas, 2012; Modell & Mak, 2008). Mandating training requirements is a good first step toward solving some of these issues; however, follow-up and implementation of current and effective training methods is needed to improve services. The present study examined the type and efficacy of training received by various first responding agencies in New Jersey, USA.

Research design

To evaluate the quality of first responder training in handling disabled citizens in response to the 2008 New Jersey statute, an online survey was administered, with Institutional Review Board approval, to

individuals working in a variety of first responder agencies (e.g. police, EMS, fire). The survey was administered from August to October, 2014. A total of 226 responses were received.

Sampling

Originally, random sampling was planned. However, due to the complexity of acquiring contact information for the myriad agencies this became unwieldy. Instead, email addresses were obtained for as many police, fire and EMS agencies as possible in all 21 New Jersey counties.

Due to the nature of their work, emergency services (police, fire and EMS) have traditionally been communities that do not share information readily. In an effort to elicit a wide-ranging response from all three services, contact was made with the Essex County (NJ) Chiefs of Police Association, the Fire Chiefs Association of Essex County (NJ) and the President of the State (NJ) Chiefs of Police Association. These Associations agreed to provide a forum through which the survey would be disseminated to their members. Additionally, the Essex Police and Fire Chiefs Associations allowed the PI to present a brief description of the project at each of their association's monthly meetings.

In addition to these efforts, extensive e-mail announcements dispersed the survey to almost every police and fire department in the state. According to the US Census Bureau (2007), New Jersey consists of 566 municipalities spread among 21 counties at the time of the last Census. Several of these local government units contract their police services to other adjacent towns. Additionally, many towns that do not have their own police department utilize the New Jersey State Police (NJSP) for law enforcement services. The NJSP provides full-time police coverage to 76 municipalities and part-time coverage to 13 others (McAneny, 2008). In addition to the NJSP, county sheriffs' departments, prosecutors' offices, county police departments, university campus police departments, human services police departments and investigative agencies such as the New Jersey Attorney General's Office serve the state's communities. It would be reasonable to calculate that close to 600 agencies of various types operate in New Jersey.

Some difficulty was encountered when attempting to contact the agency head or training officer of various police and fire services. Although many of these agencies maintain websites, no central database of valid e-mails addresses exists for the chief executives or the training officers. Agency websites do not always provide e-mails or are at times outdated. Further difficulty obtaining survey participation was encountered when several agencies requested information via fax or mail because of security concerns. Despite these concerns, 98 law enforcement agencies responded.

Similar issues were encountered when seeking to obtain participation by the fire service (as many fire departments in New Jersey are volunteer agencies) and EMS. The fire service contact information was obtained from fire department websites, municipal websites and social media. EMS information was obtained by searching the Internet – squad and municipal websites, and social media – for EMS units in each county.

Survey administration

Once the e-mail addresses were collected, a service-specific letter with accompanying instructions was sent to each individual e-mail address. The respondents were provided an Internet address link to Qualtrics, a software program to collect survey data online. Once the site was accessed, respondents were first presented with an online consent form and answered yes or no. If they consented to take the survey, they were next skipped to the first question. If they did not consent, they were skipped to the 'thank you' end page. At the completion of the survey, respondents were presented with an online debriefing form that recapped the study's purpose and included contact information for the PI.

Variables

The survey consisted of 21 multiple choice questions, creations of the PI under the guidance of the co-PI faculty advisor. The beginning several questions requested agency demographic information

Table 1. Type of first responder agency.

	Number	Percent
Police	93	44.1
Fire	35	16.6
EMS, volunteer	54	25.6
EMS, paid	3	1.4
Fire department with EMS	15	7.1
Police department with EMS	5	2.4
Other	6	2.8
Total	211[a]	100.0

[a]21 individuals did not provide an answer to this question.

Table 2. Type of training received in handling special needs citizens.

	Number	Percent
Read and sign	9	6.1
Video based training	20	13.6
Internet based training	35	23.8
Speaker/instructor	36	24.5
Combination training (i.e. speaker with video, read and sign with internet)	42	28.6
Other	5	3.4
Total	147[a]	100.0

[a]Note: Respondents (n = 85) who had received no training in handling special needs citizens did not respond to the question re: training type.

including number of personnel employed by the agency, government classification, type of service provided, population served, environment served, total calls for service and percentage of calls involving persons with special needs.

Among other questions in the study were inquiries about the respondent. These included the person's position, relationship to special needs persons, and interaction with special needs individuals. The rest of the questions addressed the special needs training provided by their agency. The most significant question addressed if the agency had completed the state mandated training course; and if yes, the method of training (e.g. video-based, Internet-based, Speaker/Instructor, etc.). The group of questions that inquired into special needs education addressed the location of the training, number of hours, perceived effectiveness, refresher training, any recommendations for improving the training method; as well as whether the training was received as in-service or basic training. In-service training courses focus on topics such as cardiopulmonary resuscitation, Hazardous Materials or Bloodborne Pathogens awareness which require periodic renewal or recertification. Basic training is initial certification in these topics as well as familiarization in topics that do not require recertification. The final questions investigated the organizational training and personnel demographics by requesting number of in-service hours, length of basic training and average years of service for the agency.

Results

Ninety percent of respondents were affiliated with an organization that had 100 or fewer employees or members (not shown in table format). According to Reaves (2011) statistics nationally in 2008, 76% of the police agencies had less than 25 personnel with another 18% reporting between 26 and 100 personnel. Although not identical to the national standards, the agencies participating reflected a similar number of agencies employing less than 100 personnel (Table 1).

Representatives from police agencies comprised the majority (44%) of survey respondents. This is followed by EMS volunteers (nearly 26%) and then firefighters (nearly 17%). More police responses may have been received because law enforcement agencies are the primary access point for contacting any municipal emergency service, particularly in towns that utilize volunteer services. Therefore, police

Table 3. Perceived effectiveness of training in recognizing & interaction with special needs persons.

	Number	(%)
Not effective	5	3.4
Somewhat effective	63	42.9
Effective	56	38.1
Highly effective	20	13.6
No opinion	3	2.0
Total	147[a]	100.0

[a]Note: Respondents (n = 85) who had received no training in handling special needs citizens did not respond to the question re: training type.

Table 4. Estimate of in-service hours per year.

		Number	(%)
Valid	Less than 10 h	16	8.2
	10–20 h	52	26.5
	30–40 h	58	29.6
	40–50 h	18	9.2
	50 h or more	52	26.5
	Total	196[a]	100.0

[a]36 individuals did not provide an answer to this question.

Table 5. Training provided by type of service.

Has your organization provided training in the recognition and response to persons with Autism/other disabilities					
			Yes	No	Total
3. What type of service[a] does your organization provide?	Police	Number	76	15	91
		Percentage	**83.5%**	16.5%	100.0%
	Fire	Number	21	13	34
		Percentage	**61.8%**	38.2%	100.0%
	EMS, volunteer	Number	35	12	47
		Percentage	**74.5%**	25.5%	100.0%
	EMS, paid	Number	0	3	3
		Percentage	.0%	**100.0%**	100.0%
	Fire Department with EMS	Number	12	2	14
		Percentage	**85.7%**	14.3%	100.0%
	Police Department with EMS	Number	4	1	5
		Percentage	**80.0%**	20.0%	100.0%
Total		Number	148	46	194
		Percentage	76.3%	23.7%	100.0%

[a]The 5 individuals indicating 'other' agency/service type were excluded from the analyses.
Notes. $X^2 = 17.56$, $df = 6$, $p = .007$.

agencies typically have open lines of communication with citizens, as well as community policing units established specifically to interact with citizens. This open access to police agencies may have led to a higher response rate.

The majority of agencies (89%) who responded to the survey were municipal departments (not shown in table format). This figure closely reflects the statistics of the government entities for the State of New Jersey (i.e. 566 individual cities, townships, towns, boroughs and villages). The majority of New Jersey emergency services are based at the local level. New Jersey has 21 counties, some of which have county police departments. Every county has a Sheriff's Department and a Prosecutor's Office.

A small percentage (8%) of respondents indicated their agencies are considered neither state, county, federal, nor municipal but instead are 'other'. In this category would be agencies such as Campus Police, Port Authority of New York/New Jersey Police, Industrial Fire Fighting Units and First Aid Squads such as those located on college/business campuses. Proportionally, these data accurately reflect the makeup of emergency services in the state as indicated in the listings of police, fire and EMS agencies (FireDepartment.net, 2014; Office of Emergency Medical Services, 2011; USACOPS, 2013).

Table 6. Perceived effectiveness by agency type.

	N	Mean[a]	Std. deviation	Std. error
Police	74	2.68	.742	.086
Fire	20	2.40	.883	.197
EMS, volunteer	31	2.58	.765	.137
Fire department with EMS	12	2.92	.793	.229
Police department with EMS	4	2.50	.577	.289
Total	141	2.63	.769	.065

[a]Note: Scores on effectiveness = 4/highly effective, 3/effective, 2/somewhat effective, and 1/not effective.
Note. ANOVA: n.s.

The majority of agencies (88%) reflected in these data serve communities or municipalities of 50,000 residents or less (not shown in table format). According to the US Census Bureau (2007), the majority of New Jersey Municipal governments also fall beneath 50,000 in population. In short, the survey findings appear to reflect the overall population of New Jersey despite the PI not employing random sampling.

Responding agencies also serve a variety of community types (not shown in table format): urban (6%), urban/suburban (21%), suburban (46%), suburban/rural (17%), and rural (7%). A small percentage (2%) classified their area served as 'other.' More than half of respondents to the survey are agency heads (not shown in table format). These data show involvement of chief executives not only in this research, but that they are aware of what their agencies' training statuses are regarding autism awareness.

The majority of responding agencies (42%) receive fewer than 2000 annual calls for service (not shown in table format). The responses were nearly evenly distributed between 2000 and 4999 annual calls through 40,000+ annual calls. While it may initially appear that agencies receiving more than 40,000 annual calls for service are higher volume than lower call receiving agencies, it should be noted that numbers of calls differ by agency type. A police department responding to fewer than 2000 calls for service, for instance, might be considered less active; whereas a fire department or EMS that responds to the same number of calls could be considered active to extremely active.

The majority of calls (89%) do not pertain to special needs citizens (not shown in table format). Based on the PI's personal experience, most emergency service agencies do *not* actually record information about the nature of a person's disability unless it is considered germane to the call for service. Therefore, it is interesting and important to note that even though the calls involving special needs persons are grouped at the low end of the scale, they are being noted by first responders.

Nearly two-thirds of responding agencies (72%; not shown in table format) have provided some training in recognizing autistic individuals, as required through the 2008 New Jersey statute. 23% of respondents indicated that their agency had not provided this training; and 5% were unsure. If these figures (23 and 5%) were to be extrapolated to the thousands of police officers, firefighters and emergency medical personnel who work in the state, it could be inferred that hundreds if not thousands of emergency service personnel in the State of New Jersey have not been provided the tools necessary to interact with those with autism.

New Jersey currently requires that all police, fire and EMS personnel utilize the Internet-based NJ Learn system as part of basic training, including training in autism awareness and response. NJLearn is a computer/Internet based system of education and training programs created to mitigate the costs of State or Federal mandated training. In terms of the type of training provided (see Table 2), some but not all of the training types comply with the New Jersey statute. The 'Read and sign' and 'Video based training', for instance, are non-compliant with the law.

Just over 5% of respondents had served as a first responder for less than five years; and 25% had served 5–10 years (not shown in table format). This means that the majority of survey respondents – over 70% – predate the 2008 law, having attended basic training before its passage. As was mentioned, new personnel are trained in autism awareness during entry level education whereas first responders

hired prior to 2008 are required to be similarly trained within three years from the point of the law's passage (i.e. by 2011). Not doing so is a violation of state law. It may be that the pre-2008 hires do not see the relevance of the training, feeling that they have been doing their jobs just fine to that point without it and that this is just one more (unnecessary) thing to do. Alternatively, a particular agency head may not see the relevance of ensuring training for the pre-2008 hires, and as such it does not happen.

The majority of personnel received awareness training as part of in-service training. Most training was conducted at the agency itself (77%; not shown in table format). A smaller percentage of trainings were held off-site (23%). Nearly 77% of trainings received were two hours or less (not shown in table format). Considering the complex nature of the information being instructed, it would appear that not enough time is being set aside for this training.

As seen in Table 3, in total 46% of study participants felt that the training was only *somewhat effective* or *not effective*. In addition, only 28% of respondents had received any follow-up or refresher training (not shown in table format). 68% indicated 'no', they had received no follow-up training; and 4% did not know or remember (not shown in table format). It is interesting that about one-fourth of respondents *had* received follow-up training despite refresher training not being required by the law. However, this could be attributed to training which was described in the literature review (i.e. offered by NJPBA or Union County Prosecutor's Office).

About two-thirds (64%; not shown in table format) of respondents indicated that they have some personal interaction with special needs individuals. In terms of the type of relationship, 28% indicated that it was a friend or acquaintance; 12% selected immediate family member; and 13% indicated some other relative (not shown in table format). This question is relevant because some members of emergency services could be used to advocate for special needs individuals and act as a resource when conducting interactive basic and in-service training. Although a notable number of respondents have some type of personal relationship with special needs individuals, included in the group are participants who have distant familiarity with special needs. Therefore, the influence of members of immediate families has been balanced in the study.

Table 4 shows are the amounts of general in-service training hours for emergency service personnel who responded to this survey. Additionally (not shown here in table format) are the number of basic training hours described by the same participants. These hours are important to autism and special needs education because at both the basic and in-service levels, training time is finite. Therefore, topics such as autism awareness may be afforded less time or a lower priority when addressing the larger training picture.

In Table 4, 64% of participants reported that their agencies conducted total in-service training time of up to, or less than, 40 h. In the emergency service field, myriad required or state mandated trainings exist that tax the hours dedicated to training and departmental budgets. Even the most dedicated agency head is required to make difficult decisions regarding training.

Table 5 reveals some differences in training provided by service agency type. Over 80% of police respondents – both regular police and those within EMS agencies – had received training in recognizing disabled individuals, including those with autism. Non-EMS firefighter respondents appear to have been trained the least (fewer than 62% of respondents).

Finally, respondents were compared on their training effectiveness rating by the type of agency they worked for via an analysis of variance (ANOVA) test. The results of the ANOVA were non-significant. As seen in Table 6, regardless of whether they worked for a police, fire, or EMS organization, respondents rated their training received as somewhere between *effective* and *somewhat effective*. Ratings by police officers and firefighters within EMS agencies were slightly higher; however the results were not significant.

Discussion and recommendations

This study investigated the extent and adequacy of training among New Jersey first responders, specifically relating to a 2008 state law mandating that autism and hidden disability recognition and response

training be conducted. The data received from the survey indicated that a significant percentage of emergency service personnel have not completed the state mandated training – possibly because they were hired prior to the law's 2008 passage. Despite the requirement that pre-2008 hires be trained by 2011, the results suggest this may not be happening. Potentially, thousands of police officers, firefighters and EMS personnel who would respond to calls involving autistic individuals have not been trained to respond properly to these situations. As the CDC has noted, one in 45 New Jersey children is diagnosed with some form of autism. As this group of young individuals grows older, they will enter community settings and interaction between them and emergency service groups will become more frequent. Parents who currently care for small children will be guardians for teenage and adult individuals with special needs.

Individuals who have autism will encounter some of the typical problems associated with their age, and because of their social learning difficulties these problems may be exacerbated. Autistic adults may be more likely to be unemployed (Baldwin et al., 2014), and less likely to live independently (Gray et al., 2014), for instance. Some research has shown that autistic adolescents and young adults have greater prevalence of epilepsy and seizures than their non-autistic peers (Rossi et al., 2000). Some of those issues may involve first responders and therefore action should be taken to ensure compliance with the current law.

The data collected in this study suggest that several actions are necessary to address the needs of the autism community. A primary goal should be to improve all aspects of autism awareness training being conducted in the State of New Jersey. This goal must be achieved using a multifaceted approach.

Regarding the methods currently used to train emergency service personnel, while computer-based training is both cost effective and efficient in delivering the message, in the opinion of the PI it does not provide the same quality of training that qualified in-person training accomplishes. One alternative and arguably superior training method is interaction with autistic individuals, which serves to train the emergency service provider and familiarize the special needs person with emergency responders (Chown, 2009; Debbaudt, 2002). Essentially, computer-based or Internet training should not be used as the sole method for training and should be supplemented with other techniques (Chown, 2009).

Speaker-based training supplemented with other techniques should be used as either refresher training or more importantly as base-line training because of the importance of providing a good foundation for future education. While it is important to include parents and advocates as a part of the training process, other options should be considered. As indicated in the data, there are a significant number of emergency service providers who have an immediate family relationship with special needs individuals. Using this untapped resource and engaging emergency service personnel to train other emergency service personnel brings a personal bond and validity to the training (Chown, 2009).

The results suggest that participants in this survey supported change from the current requirements to include lengthier and more diverse training methods. These methods should include other disabilities so that comparisons can be used to highlight differences (Chown, 2009). Additionally, the training should be developed using field and training personnel in an effort to develop tactically and operationally sound procedures.

Training should also be conducted with the various emergency service providers together and take the form of discussion groups or multiple service role play scenarios, where each group can understand recognition indicators and their response (Henshaw & Thomas, 2012). Finally, the importance of training should be promoted to the first responder community hired prior to 2008. While the law requires that pre-2008 hires be trained in autism recognition within three years of the law's passage, this requirement may have been overlooked or ignored. Since earlier hires make up a sizeable percentage of the first responder population, time, effort and money should be expended to entice them to participate in a continuing education program focused on autism awareness and recognition. Municipal, county and state agencies may consider partnering with federal agencies (e.g. the US Department of Health and Human Services) to both improve and more widely promote autism recognition training.

Limitations

The present study has a number of limitations that should be acknowledged. First, due to logistical complications the PIs ultimately did not employ random sampling in gathering the sample. As such, it is not possible to definitively say how representative the results are of the greater New Jersey population of first responders. That said, a comparison of survey results with distributions from the US Census (e.g. of numbers of first responder agencies, of NJ municipality population sizes) shows some proportionality. Secondly, as seen in one of the tables, proportionally more police responded to the survey than other types of first responders. This is potentially attributable to the fact that the PI is a former police officer, whose outreach to the various agencies may have elicited heightened recognition among fellow police. As such, there may be bias in the results to that end.

As one of the reviewers commented, the study does not assess first responders' perceptions of their own autism awareness. As mentioned, previous studies have found that first responders tend to over-estimate their knowledge about autism. In hindsight, it would have been good to address this point, and its omission is a limitation of the present findings.

Conclusions

New Jersey has taken an important first step by recognizing the prevalence and significance of autism. This first step was achieved by enacting a law requiring the training of all police, fire and EMS personnel. The development of an Internet-based curriculum furthered the service provided to this special needs population. However, like any other educational program, this training requires updating and re-evaluation to maintain a relevant and responsive program, based on up-to-date knowledge.

The efforts of the New Jersey State PBA, former Union County Prosecutor Theodore Romankow (mentioned in the literature review) and others have helped remind service providers and citizens of the importance of this training. However, New Jersey officials need to continue their commitment to this group by ensuring that agencies adhere to mandatory training requirements, as well as make additional efforts to promote the training to first responders hired prior to 2008. Additionally, they should provide agencies and ultimately field personnel with affordable and tactically sound training to provide the best possible outcomes in emergency situations involving the developmentally disabled. Partnering with appropriate federal agencies may help in this regard.

If the State of New Jersey and emergency service agency heads desire to achieve the goal of providing adequate service to the autism community, they need to acknowledge and implement the recommendations of their fellow service providers. This implementation would include a more comprehensive training curriculum and enforcement of current training requirements. Any attempt to advance this training would require further and more in-depth study of this topic and autism response training in general. This study can be accomplished by cooperative efforts between the State and Federal government, agency heads, advocates, educators, training officers and field personnel.

In conclusion, this study is significant for the global community of readers – researchers, practitioners and academics – because ASD does not recognize national borders or geographic landmarks, and is being diagnosed in countries throughout the world. The number of diagnosed individuals worldwide is larger than was originally believed. Therefore both nationally and internationally, parents and caregivers of these individuals will expect law enforcement and other first responders to handle calls professionally. New Jersey is in the forefront of the issue by enacting this legislation. However other states, countries and agencies can develop training by understanding the challenges faced here.

Note

1. New Jersey joined several other States (e.g. Illinois, Florida, Indiana, and Pennsylvania) that required first responders be trained to recognize the signs and interventions for autism (Debbaudt, 2008; Malone, 2008).

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Edward Kelly is a graduate student in Criminal Justice at Kean University. He is a retired Police Lieutenant with the Livingston (NJ) Police Department (USA) (31 years of service) and former State of New Jersey certified EMT/EMT Instructor with 25 years of experience. Lt. Kelly instructed a variety of police and medical courses at both the department and Academy levels. During his career, in addition to his regular duties, he commanded the department Training Bureau and Strategic Response Unit. He is the father of three children including a 16 year old son with autism.

Connie Hassett-Walker is an Associate Professor of Criminal Justice at Kean University in Union, New Jersey (NJ), USA. She earned her PhD in Criminal Justice from Rutgers University in Newark, NJ (USA) in 2007. Her work has appeared in a variety of scholarly journals, including *Journal of Criminal Justice, Journal of Interpersonal Violence, Journal of Ethnicity in Criminal Justice*, and *Justice System Journal.* She is the author of *Black Middle Class Delinquents* (LFB Scholarly Publishing, 2009).

ORCID

Connie Hassett-Walker http://orcid.org/0000-0002-7518-8840

References

Alicea, J. O., & Panzarella, R. (1997). Police tactics in incidents with mentally disturbed persons. *Policing, 20*, 326–329.

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders (DMS-5).* Retrieved from American Psychiatric Association http://www.psych.org/practice/dsm

Anderson, C., Kiely Law, J., Daniels, A., Rice, C., Mandell, D. S., Hagopian, L., & Law, P. A. (2012). Occurrence and family impact of elopement in children with autism spectrum disorders. *Pediatrics, 130*, 870–877.

Autism Speaks. (n.d.). Autism Speaks global autism public health initiative. Retrieved from https://www.autismspeaks.org/science/research-initiatives/global-autism-public-health

Baldwin, S., Costley, D., & Warren, A. (2014). Employment activities and experiences of adults with high-functioning autims and Asperger's disorder. *Journal of Autism & Developmental Disorders, 44*, 2440–2449.

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.

Crary, D. (2013, August 12). Deaths of wandering kids prompt action. *Fox9News.* Retrieved from http://www.myfoxtwincities.com/story/23118906/deaths-of-wandering-autistic-kids-prompt-action

Debbaudt, D. (2002). *Autism, advocates, and law enforcement professionals: Recognizing and reducing risk situations for people with autism spectrum disorders.* Phildelphia, PA: Jessica Kingsley.

Debbaudt, D. (2008, July 21). Autism training helps police tailor response. (T. Malone, Interviewer)

Debbaudt, D., & Rothman, D. (2001, April). Contact with individuals with autism: Effective resolutions. *The FBI Law Enforcement Bulletin.* Retrieved from http://poac.net/download/resources/le-ContactwithIndividualswithAutism-EffectiveResolutions.pdf

FireDepartment.net. (2014). *New Jersey Fire Departments.* Retrieved from FireDepartment.net http://firedepartment.net/directory/new-jersey

Goodman, J. D. (2014, January 21). DNA confirms body parts belong to missing boy with autism. *New York Times.* Retrieved from http://www.nytimes.com/2014/01/22/nyregion/remains-found-in-queens-are-matched-to-missing-autistic-boy.html?action=click&contentCollection=N.Y.%20%2F%20Region&module=RelatedCoverage&region=Marginalia&pgtype=article

Gray, K. M., Keating, C. M., Taffe, J. R., Brereton, A. V., Einfeld, S. L., Reardon, T. C., & Tonge, B. J. (2014). Adult outcomes in autism: Community isolation and living skills. *Journal of Autism & Developmental Disorders, 44*, 3006–3015.

Grinker, R. R., & Cho, K. (2013). Border children: Interpreting autism spectrum disorder in South Korea. *Ethos, 41*, 46–74.

Haydon, T. (2013, March 31). Union county officers confronting autism, filling a training gap. *The Star Ledger.* Retrieved from http://www.nj.com/union/index.ssf/2013/03/officer_confronting_autism_fil.html

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

Holmes, D. L. (2013). Law enforcement agencies and autism. In F. R. Volkmar (Ed.), *Encyclopedia of Autism Spectrum Disorders* (pp. 1699–1705). New York, NY: Springer.

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.

Krugel, M. (2013, April). Autism awareness. *New Jersey COPS, 17*, 28–30.

Litzcke, S. M. (2006). Attitudes and emotions of German police officers toward the mentally ill. *International Journal of Police Science and Management, 8*, 119–132.

Malone, T. (2008, July 20). Autism training helps police tailor response. *Chicago Tribune*. Retrieved from http://articles.chicagotribune.com/2008-07-21/news/0807210022_1_autism-police-officers-local-police-departments/2

Matson, J. L., Worley, J. A., Fodstad, J. C., Chung, K. M., Suh, D., Jhin, H. K., … Furniss, F. (2011). A multinational study examining the cross cultural differences in reported symptoms of autism spectrum disorders: Israel, South Korea, the United Kingdom, and the United States of America. *Research in Autism Spectrum Disorders, 5*, 1598–1604.

McAneny, D. J. (2008, April 27). *Rural visits from state police may be coming to an end*. Retrieved from NJ.COM http://www.nj.com/south/index.ssf/2008/04/rural_visits_from_state_police.html

McGonigle, J. J., Migyanka, J. M., Glor-Scheib, S. J., Cramer, R., Fratangeli, J. J., Hegde, G. G., … 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.

Modell, S. J., & Cropp, D. (2007). Police officers and disability: Perceptions and attitudes. *Intellectual and Developmental Disabilities, 45*, 60–63.

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.

National Alliance on Mental Illness. (2013). *Mental Illnesses*. NAMI Retrieved from http://www.nami.org/Template.cfm?Section=By_Illness

New Jersey Revised Statutes. (2008, September 9). Title 26 and 52 Chapter 80.

Office of Emergency Medical Services. (2011, July 15). *New Jersey EMS Agencies*. Retrieved from State of New Jersey Department of Health http://www.state.nj.us/health/ems/

Reaves, B. A. (2011, July). *Census of state and local law enforcement agencies, 2008*. US Department of Justice, Office of Justice Programs, Bureau of Justice Statistics Retrieved from http://www.bjs.gov/content/pub/pdf/csllea08.pdf

Rossi, P. G., Posar, A., & Parmeggiani, A. (2000). Epilepsy in adolescents and young adults with autistic disorder. *Brain & Development, 22*, 102–106.

Teagardin, J., Dixon, D. R., Smith, M. N., & Granpeesheh, D. (2012). Randomized trial of law enforcement training on autism spectrum disorders. *Reseach in Autism Spectrum Disorders, 6*, 1113–1118.

The Senate and General Assembly of the State of New Jersey. (2008, September 9). Autism awareness training. *Public Law 2008 Chapter 80*. Trenton, NJ: State of NJ. Retrieved from http://www.njleg.state.nj.us/2008/Bills/A2000/1908_R1.PDF

United States Census Bureau. (2007). *Local governments and public school systems by type and state: 2007*. US Department of Commerce Retrieved from http://www.census.gov/

USACOPS. (2013). *New Jersey*. USA COPS Retrieved from http://www.usacops.com/nj/