Race/ethnicity composition of police officers in officer-involved shootings

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Abstract

Purpose – The purpose of this paper is to evaluate officer and civilian race/ethnicity disparities during ten years of officer-involved shootings (OIS).
Design/methodology/approach – Internal affairs, personnel and geospatial data were triangulated for 253 OIS at the Dallas Police Department from 2005 to 2015. Multinomial regression models were used to evaluate the relationship between civilian and officer race/ethnicity in OIS, controlling for officer, situational and neighborhood factors.
Findings – In total, 48 percent of unique OIS involved a non-Hispanic black civilian and most OIS occurred in Hispanic majority neighborhoods (48 percent). Officer age and number of shooters on scene were the only variables significantly associated with officer race/ethnicity. Most notably, officer race/ethnicity was not associated with the race/ethnicity of the civilian during OIS incidents.
Originality/value – There is limited scientific evidence on whether officers of certain races/ethnicities are disproportionately likely to engage in OIS with civilians of a particular race/ethnicity due to the relative rarity of such events.

Keywords Police, Use-of-force, Race and ethnicity, Officer-involved shootings

Paper type Research paper

Introduction

In the USA, there are over 15,000 law enforcement agencies and 701,000 full-time police officers (US Department of Justice, 2018), which equates to more than 62m interactions between police and civilians every year (US Department of Justice, 2013). Among police–citizen interactions, 1.4 percent had force used (Eith and Rurose, 2011). Officers are trained to escalate use-of-force in a gradual fashion and discharging a firearm is the highest level of use-of-force available to officers in the USA (Jetelina, Reingle Gonzalez and Bishopp, 2017). As a result, officer-involved shootings (OIS) are relatively rare events for police departments.

Although rare, previous literature has shown that situational-(e.g. civilian displayed a weapon; officer hurt on scene), environmental- (e.g. neighborhood crime) and individual-level (e.g. officer and civilian sex, civilian use of drugs, alcohol, and mental health status, military status)

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factors predict the occurrence of shootings during officer and civilian interactions (Wheeler *et al.*, 2017; Klinger *et al.*, 2016; Legewie and Fagan, 2016; Jetelina, Jennings, Bishopp, Piquero and Reingle Gonzalez, 2017; Reingle Gonzalez *et al.*, 2018). However, because of their relative rarity, there is limited scientific evidence on the association – if one exists – between the race/ethnicity of shooting officers and the race/ethnicity of civilians involved in OIS. Among the studies that have evaluated this relationship among officers involved in shootings, results have been mixed. Between 2004 and 2006, Ridgeway (2016) found that non-Hispanic (NH) black officers in New York were 3.1 times more likely to shoot than other officers. Fryer (2016) found no racial differences among officers involved in shootings. Similarly, Johnson *et al.* (2019) found some evidence of racial/ethnic disparities among officers and civilians involved in OIS. Specifically, they found that NH black officers were significantly more likely to shoot black civilians than whites, and Hispanic officers were more likely to shoot Hispanic officers compared to whites. However, the study by Johnson and colleagues was unable to control for the demographic composition of the area in which a shooting occurred, a common explanation for disparities observed in OIS trends. As a result, limited evidence exists on whether officers are more likely to shoot minority civilians compared to white civilians when controlling for underlying criminal activity and objective threat posted during the encounter. To fill this gap in the literature, the research team compiled 10 years of OIS data at the Dallas Police Department (DPD). Specifically, the purpose of this study was to identify whether officer and civilian race/ethnicity disparities exist during OIS.

Methods

Study population

Dallas, Texas is the ninth largest city in the USA, with a 2010 population of approximately 1.2m. Dallas civilians are 29 percent NH white, 25 percent NH black, 42 percent Hispanic and 6 percent other races (US Census Bureau, 2019). The city of Dallas is policed primarily by the 3,551 sworn members of the DPD. In February 2016, 82 percent ($n = 2{,}900$) of DPD officers were male and 51 percent identified as NH white, 26 percent as NH black, 20 percent as Hispanic and 3 percent as other races.

Data collection

OIS (i.e. shots fired by officers or at officers) are routinely investigated by DPD's Special Investigative Unit. After the initial investigation of each shooting, detectives are responsible for reporting shooting-related information (including civilian race/ethnicity) into an internal affairs database (US Department of Justice, 2018). For this study, internal affairs data were abstracted for all DPD OIS that took place between January 1, 2005 and December 31, 2015. This study defined OIS as any on- or off-duty event in which officers discharged a firearm, excluding training. The researchers merged internal affairs data with personnel records to obtain additional demographic data about officers, including primary job assignment, tenure, age, race/ethnicity, sex, educational attainment and each officer's Certificate of Release of Discharge from Active Duty (DD Form 214). In addition, neighborhood characteristics were obtained by linking geospatial data from US Census records and incident reports. The final sample size was 258 police officers involved in 168 unique shootings.

Measures

Independent variable. Officer race/ethnicity was categorized as NH white, NH black, Hispanic or Latino and other, which consisted of officers who identified as Asian or American-Indian.

Dependent variable. Civilian race/ethnicity was categorized as NH white, NH black, Hispanic or Latino and other, according to officer self-report.

Covariates. Covariates were categorized based on officer, civilian, situational and neighborhood level. Among officer level, covariates included sex (Male/Female), age (continuous), tenure (in years, dichotomized around the median of 10.4 years), patrol status (i.e. assigned to a patrol division; Yes/No), history of higher education (no higher education vs any higher education). In addition, officer veteran status (non-veteran/veteran) was included as a covariate given recent literature that has shown a strong relationship between military experience and OIS (Reingle Gonzalez *et al.*, 2018). Among civilian-level covariates, we included sex (Male/Female). Among situational covariates, we included time of day (morning (5 a.m.–11:59 a.m.), afternoon (12 p.m.–7:30 p.m.) and night (7:31 p.m.–4:59 a.m.)), original reason for call of service (suspicious activity, robbery/burglary, serving warrant, man with gun/active shooter and misc.) and civilian weapon displayed (gun, toy gun, motor vehicle and other). Among neighborhood-level covariates, the research team included racial/ethnic majority make-up of neighborhood (census tract majority NH white, majority NH black, majority Hispanic/Latina/o or no racial/ethnic majority) and median annual household income for census tracts in which OIS incidents occurred ($\leqslant$\$39,146 or $>$ \$39,146).

Statistical analysis

Univariate statistics, including tabulations, percentages, means and standard deviations, was used to describe officer-, civilian-, situational and neighborhood-level sociodemographics, covariates, independent and dependent variables. Multilevel unadjusted multinominal regression models were used to explore the association between each of the independent variables and the dependent variable (i.e. race/ethnicity of the officer) separately. The bivariate model was expanded to adjust for confounders that may partially or fully explain the main outcome. The main outcome was a nominal variable so relative rate ratios (RRR) were used to evaluate the predictability of independent variables on officer race/ethnicity. All analyses were conducted using Stata SE 15.1 (College Station, Texas) (Stata Statistical Software, 2013).

Results

A description of the officers and civilians involved in OIS is presented in Table I. The majority of officers were NH white (57 percent), 22 percent were Hispanic or Latino and 17 percent were NH black. Most officers involved in shootings were male (96 percent). The average age of officers at the time of the shooting was 39.3 years (SD = 8.0) and half of officers were employed by the department for less than 10.4 years. Most officers involved in a shooting were assigned to a patrol division (85 percent), and 79 percent of officers were involved in only one shooting during the 10-year data abstraction period. Additionally, 30 percent of officers in the sample were veterans and 66 percent had some level of higher education. Civilians were primarily NH black (47 percent), followed by Hispanic (28 percent) and NH white (23 percent). The majority of civilians involved in shootings were male (97 percent).

Table II depicts prevalence rates at the incident level (i.e. unique shootings). The average number of officers that discharged a weapon was 1.54 (SD = 1.2). The majority of civilians involved in OIS were NH black (48 percent) and male (96 percent). In the majority of OIS, civilians displayed a firearm (52 percent). More than half of OIS incidents took place during the late-night shift (54 percent) and in a Hispanic majority neighborhood (48 percent).

Results of the unadjusted and adjusted multinomial regression analyses between officer race/ethnicity and civilian race/ethnicity are presented in Table III. In bivariate models, NH black officers were more likely to be older than NH white officers in OIS (RRR = 1.16; $p < 0.001$) and Hispanic officers were less likely to have more than three shooting officers on

	n (%)
Race/ethnicity	
NH white	147 (57)
NH black	43 (17)
Hispanic or Latino	57 (22)
NH other	11 (4)
Sex	
Male	247 (96)
Female	11 (4)
Age at recruitment (years), mean (SD)	26.2 (4.7)
Tenure (years)	
⩽10.4	129 (50)
> 10.4	129 (50)
Patrol status	
Yes	218 (85)
No	40 (16)
Veteran status	
Non-veteran	181 (70)
Veteran	77 (30)
Education	
No college degree	87 (34)
College degree or higher	171 (66)

Table I.
Sample description by officer level ($n = 258$ shooting officers) and officer characteristics

scene, compared to white officers. In multivariate models, older age was associated with NH black officers during OIS (RRR = 2.11; $p < 0.05$). Notably, civilian race/ethnicity was not associated with officer race/ethnicity in any models.

Discussion

This study examined the interplay between race/ethnicity during OIS in a single police department over a 10-year period. Between 2005 and 2015, there were 258 OIS, and no significant racial and ethnic patterns across these shooting incidents were detected. This is consistent with past literature by Fryer (2016), which found no racial differences among officers and civilians involved in shootings. In fact, Fryer did not identify consistent racial/ethnic differences in their robust assessment of disparities and discrimination in use-of-force and shooting involvement. However, Fryer's study was not focused on the association between officer and civilian race/ethnicity in OIS. Findings from this study differ from those identified by Johnson *et al.* (2019), which found that minority officers were significantly more likely to shoot civilians of their own race/ethnicity than whites. This may be due to the limited scope of this study's dataset, or the effect of shooting-area demographics on shooting trends.

Further, results from this study found that age (in bivariate and multivariate model) and number of shooters on scene (in bivariate model only) influences officer race/ethnicity patterns in OIS. The finding that age is associated with shooting involvement in general is consistent with this team's prior research on OIS, which also suggests that officer age is associated with officer injury (Reingle Gonzalez *et al.*, 2018; Paddock *et al.*, 2019). Therefore, it is key that officer age is a critical factor to consider in studies of shooting involvement. Other than age, very few factors influenced officer race/ethnicity patterns in OIS. A potential explanation is that race/ethnicity really does not truly matter at the situation level. Instead, civilian behavior (e.g. aggressive, disregarding commands, etc.)

	n (%)
Officer	
No. officers that shot weapon	
Mean, SD	1.54 (1.2)
Median, Range	1 (1–11)
Civilian	
Race/ethnicity	
NH white	33 (19)
NH black	81 (48)
Hispanic or Latino	50 (30)
Sex	
Male	162 (96)
Female	5 (3)
Situational	
Civilian weapon displayed	
No weapon displayed	29 (17)
Gun	88 (52)
Toy gun	8 (5)
Motor vehicle	25 (15)
Other	19 (11)
Time of day	
Morning	29 (17)
Afternoon	48 (28)
Night	92 (54)
Original call for service	
Man with gun/active shooter	29 (17)
Patrol observation/traffic stop	38 (23)
Robbery/burglary	21 (13)
Major disturbance	15 (9)
Undercover/warrant	24 (14)
Other	41 (24)
Neighborhood	
Racial/ethnic make-up of neighborhood	
Black majority	45 (28)
White majority	21 (11)
Hispanic majority	79 (48)
Equally mixed	21 (11)
Average neighborhood income (mean, SD)	44,601 (20,832)

Notes: $n = 168$ unique OIS. CI, confidence interval; NH, non-Hispanic; OIS, officer-involved shooting

Table II. Sample description by incident level

and environmental factors such as geography and crime rates likely play a far larger role in predicting OIS (Johnson *et al.*,2019; Worral *et al.*, 2018).

Despite the mixed results on racial/ethnic disparities in OIS present in the literature, the public and research community has consistently called for police officer training techniques to decrease the true or perceived disparities between race/ethnicity of officers and the civilians they serve, with the most common being implicit bias and de-escalation. At DPD, these trainings have been implemented since 2013. Using DPD sub-lethal use-of-force data from 2014 to 2016, Jetelina *et al.* (2017) did not identify significant patterns in non-lethal use-of-force according to officer and civilian race/ethnicity. It is conceivable that these training programs and interventions are highly effective in reducing racial/ethnic disparities in use-of-force and shootings, and should be implemented in municipalities nationwide. It is also possible that the findings presented in the literature (including this study) are largely

	Officer race/ethnicity[a]			
	Bivariate		Multivariate	
	NH black RRR	Hispanic RRR	NH black RRR	Hispanic RRR
Civilian				
Race/ethnicity				
NH white	Ref	Ref		
NH black	4.53	1.21		
Hispanic	5.00	1.57		
Sex				
Male	0.06	0.14		
Female	Ref	Ref		
Officer				
Sex				
Male	0.34	0.84		
Female	Ref	Ref		
Age	1.16***	0.98	2.11*	0.99
Tenure (years)				
< 10.4	Ref	Ref		
> 10.4	133	1.54		
Patrol status				
Yes	0.55	0.96		
No	Ref	Ref		
Veteran status				
Non-veteran	0.70	1.27		
Veteran	Ref	Ref		
Situational				
Number of officers				
1	Ref	Ref	Ref	Ref
2	0.48	0.54	0.41	0.57
3	0.44	0.43*	0.39	0.43
Civilian weapon displayed				
No weapon displayed	Ref	Ref		
Gun	0.63	0.53		
Toy gun	0.17	0.20		
Motor vehicle	0.92	0.73		
Other	0.86	0.75		
Time of day				
Morning	Ref	Ref		
Afternoon	0.48	1.20		
Night	1.13	1.20		
Original call for service				
Man with gun/active shooter	Ref	Ref		
Patrol/traffic stop	0.71	1.73		
Robbery/burglary	0.92	0.53		
Major disturbance	0.77	1.25		
Undercover/warrant	0.57	0.59		
Other	1.28	3.29*		
Neighborhood				
Neighborhood race				
Black majority	Ref	Ref		
White majority	0.30	0.69		
Hispanic majority	0.41	1.22		
Equally mixed	0.31	0.68		
Neighborhood income				
⩽Median ($39,665)	1.99	1.03		
> Median	Ref	Ref		

Table III. Multilevel, relative risk ratios of officer race/ethnicity across officer, civilian, situational and neighborhood

Notes: CI, confidence interval; RRR, relative risk ratio; NH, non-Hispanic. [a]Reference group: non-Hispanic white. *$p < 0.05$; ***$p < 0.001$

generated from large, urban law enforcement agencies with substantial resources and diversity in terms of the officers employed. These findings may not universally apply to smaller, suburban, rural or less diverse agencies, as well as those which are unable to afford to provide bias reduction training to their officers routinely. This expansion of the knowledge base to include data from smaller agencies is an important area for future research.

Limitations

Results from this study should be considered in light of several limitations. First, this is an analysis of police-involved shootings in one law enforcement agency and cannot be generalized to agencies across the USA. In the absence of national (or state) surveillance systems tracking police use-of-force, this limitation will continue to limit our generalizable knowledge about officer-civilian interactions. Second, this study was able to only control for citizen sex, as limited demographic data about the civilian involved in the shooting were collected. Additional individual-level factors, such as civilian body height or weight, response to resistance, physical fitness, and visible tattoos likely all influence the occurrence and outcomes of OIS. Future research should strive to collect those data and append them to incident reports for qualitative analyses.

In conclusion, results from this study did not identify an association between officer race/ethnicity and the race/ethnicity of civilians involved in OIS in one urban police department. Future research should continue to investigate whether this phenomenon is consistent across diverse law enforcement agencies in the USA.

References

Eith, C. and Rurose, M.R. (2011), "Contacts between police and the public, 2008", US Department of Justice, Bureau of Justice Statistics, Washington, DC.

Fryer, R.G. Jr (2016), "An empirical analysis of racial differences in police use of force", Working Paper No. 22399, National Bureau of Economic Research, Washington, DC.

Jetelina, K.K., Reingle Gonzalez, J.M. and Bishopp, S.A. (2017), "Gradual escalation of use-of-force reduces police officer injury", *Injury Prevention*, Vol. 24 No. 1, pp. 35-40.

Jetelina, K.K., Jennings, W.G., Bishopp, S.A., Piquero, A.R. and Reingle Gonzalez, J.M. (2017), "Dissecting the complexities of the relationship between police officer-civilian race/ethnicity dyads and less-than-lethal use of force", *American Journal of Public Health*, Vol. 107 No. 7, pp. 1164-1170.

Johnson, D.J., Tress, T., Burkel, N., Taylor, C. and Cesario, J. (2019), "Officer characteristics and racial disparities in fatal officer-involved shootings", *Proceedings of the National Academy of Sciences*, Vol. 116 No. 32, pp. 15877-15882.

Klinger, D., Rosenfeld, R., Isom, D. and Deckard, M. (2016), "Race, crime, and the micro-ecology of deadly force", *Criminology and Public Policy*, Vol. 15 No. 1, pp. 193-222.

Legewie, J. and Fagan, J. (2016), "Group threat, police officer diversity and the deadly use of police force", Columbia Public Law, New York, NY.

Paddock, E., Jetelina, K.K., Bishopp, S.A., Gabriel, K.P. and Reingle Gonzalez, J.M. (2019), "Factors associated with civilian and police officer injury during 10 years of officer-involved shooting incidents", *Injury Prevention*, doi: 10.1136/injuryprev-2019-043467.

Reingle Gonzalez, J.M., Bishopp, S.A., Jetelina, K.K., Paddock, E., Gabriel, K.P. and Cannell, M.B. (2018), "Does military veteran status and deployment history impact officer involved shootings? A case-control study", *Journal of Public Health*, Vol. 41 No. 3, pp. e245-e252.

Ridgeway, G. (2016), "Officer risk factors associated with police shootings: a matched case-control study", *Statistics and Public Policy*, Vol. 3 No. 1, pp. 1-6.

Stata Statistical Software (2013), "SE 15.1, computer program", StataCorp LP, College Station, TX.

US Census Bureau (2019), "QuickFacts", US Census Bureau, Dallas city, TX.

US Department of Justice (2013), "Police behavior during traffic and street stops, 2011", Office of Justice Programs, Bureau of Justice Statistics, Washington, DC.

US Department of Justice (2018), "Full-time employees in law enforcement agencies, 1997-2016", Office of Justice Programs, Bureau of Justice Statistics, Washington, DC.

Wheeler, A.P., Phillips, S.W., Worrall, J.L. and Bishopp, S.A. (2017), "What factors influence an officer's decision to shoot? The promise and limitations of using public data", *Justice Research and Policy*, Vol. 18 No. 1, pp. 48-76.

Worral, J.L., Bishopp, S.A., Zinser, S.C., Wheeler, A.P. and Phillips, S.W. (2018), "Exploring bias in police shooting decisions with real shoot/don't shoot cases", *Crime and Delinquency*, Vol. 64 No. 9, pp. 1171-1192.

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