

Exploring the Potential for Body-Worn Cameras to Reduce Violence in Police–Citizen Encounters

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Abstract One of the most compelling perceived benefits of body-worn cameras (BWCs) involves the potential for reductions in citizen complaints and police use of force. A handful of early studies reported significant reductions in both outcomes following BWC adoption, but several recent studies have failed to document such effects. The current study explores this question using data from a randomized controlled trial conducted in the Spokane (WA) Police Department. Approximately half of patrol officers ($n = 82$) were assigned BWCs in May 2015, while the other half ($n = 67$) received their BWCs 6 months later (November 2015). The study explores the effects of BWCs on use of force, complaints against officers, and officer injuries, using more than three years of official department data pre- and post-BWC deployment. The outcomes of interest are rare in Spokane, which limited both statistical power and the results from significance testing. However, the within-group trends are consistent with a positive effect, particularly for percent change. Following BWC deployment, the percentage of officers with a complaint in each group declined by 50% and 78% (Control and Treatment, respectively); the percentage of officers with a use of force declined notably (39%) for one group only. The reductions disappeared after 6 months for the Treatment group. There was no relationship between BWCs and officer injuries. The authors discuss the implications of the findings for the ongoing dialogue on BWCs.

Introduction

A persistent undercurrent of racial tension has been one of the defining features of American law enforcement over much of the last century (White and Fradella, 2016). In 1968, the National Advisory Commission on Civil Disorders concluded ‘deep hostility between police and ghetto communities’ was a primary cause of the riots

that occurred during the 1960s (Kerner Commission, 1968, p. 157). Fifty years later, the final report of the President’s Task Force on 21st Century Policing (2015, p. 5) again pointed to low reserves of trust and police legitimacy in minority communities as the explanation for civil unrest following police killings of citizens in Ferguson (MO), Baltimore (MD), and other cities across the US:

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‘In establishing the task force, the President spoke of the distrust that exists between too many police departments and too many communities—the sense that in a country where our basic principle is equality under the law, too many individuals, particularly young people of color, do not feel as if they are being treated fairly.’

The Task Force (2015) final report identified nearly 60 recommendations for building trust between police and citizens, and body-worn cameras (BWCs) are highlighted as a tool for achieving that objective. Since 2015, the White House and the US Department of Justice have strongly promoted the adoption of BWCs by police, as evidenced by the creation of a National Body-Worn Camera Toolkit (Bureau of Justice Assistance, 2016a), a federal funding program that has provided \$40 million to more than 175 law enforcement agencies for the purchase of BWCs (Department of Justice, 2016), and a training and technical assistance mechanism that facilitates BWC adoption and program management (Bureau of Justice Assistance, 2016b).

Proponents of BWCs have made numerous claims regarding the benefits of the technology, including that BWCs can reduce violence during police-citizen encounters (White, 2014).¹ A number of early studies reported significant reductions in citizen complaints against officers and police use of force following deployment of BWCs, suggesting the technology can produce measurable change in these two important outcomes. An evaluation of BWCs in the Rialto (CA) Police Department documented a nearly 90% drop in citizen complaints against police, and a 60% decline in use of force by officers (Ariel *et al.*, 2015).

Similarly, positive results have emerged from studies in Mesa (AZ; Mesa Police Department, 2013), Orlando (FL; Jennings *et al.*, 2015), and Tampa (FL; Sullivan and Marrero, 2016).² Hedberg and colleagues (2016) estimated the effect of BWCs on citizen complaints in Phoenix (AZ) and concluded ‘if BWCs are employed as prescribed [i.e., 100 percent activation compliance], a majority of complaints against officers would be eliminated’ (p. 16).

However, several recent studies have failed to document positive effects on citizen complaints and use of force. A study by the Edmonton Police Service (2015) concluded BWCs had no measurable impact on either outcome. Grossmith *et al.* (2015) found a statistically significant decline in citizen complaints in only two of the ten London police boroughs examined.³ Ariel and colleagues (2016c, p. 2) described findings from ten BWC studies and concluded the technology ‘had no effect on use of force’ overall, but the null finding was explained by mixed results across studies.⁴ Ariel *et al.* (2016c) also found a troubling link between BWCs and increased rates of assaults on officers.⁵ Ariel *et al.* (2016b) tied patterns in use of force to officer decisions on BWC activation. That is, when officers followed policy—they activated the BWC at the start of citizen encounters and advised citizens of the BWC—use of force declined by 37%. When officers did not follow policy, use of force actually increased by 71%.

The mixed findings on BWCs and violence in police-citizen encounters suggest the dynamics at play may be considerably more complex than originally described by advocates of the technology.⁶

¹ Research has explored a number of other potential benefits and limitations associated with BWCs. Due to space constraints, the authors focus on the outcomes most relevant for the current study: use of force, complaints, and officer injuries. See White (2014) and the National Body-Worn Camera Toolkit (Bureau of Justice Assistance, 2016a) for additional discussion of other benefits and challenges associated with BWCs.

² For additional studies reporting reductions in complaints and use of force see: Goodall (2007); Ellis *et al.* (2015).

³ Six of the ten boroughs did experience fewer complaints but only two reached statistical significance, and the effect across all boroughs was also not significant (Grossmith *et al.*, 2015).

⁴ Researchers randomized shifts rather than officers (Ariel *et al.*, 2016c).

⁵ To our knowledge, Ariel *et al.* (2016c) is the only published study to examine this important outcome.

⁶ We use ‘violence’ as a general term that captures aggression and combativeness in police-citizen encounters, and we treat use of force, complaints against officers, and officer injuries as indicators of violence.

The inconsistent results are especially troubling given the rapid diffusion of BWCs in law enforcement and the potentially severe, longstanding consequences of violence in police–citizen encounters (Fyfe, 1988; President’s Task Force on 21st Century Policing, 2015; White and Klinger, 2012). Moreover, the potential link between BWCs and increased assaults on officers (Ariel *et al.*, 2016c) warrants immediate attention from researchers. The current study explores these questions using data from a randomized controlled trial in Spokane, Washington.

Methods and data

The current study is part of a larger project examining the impact and consequences of BWCs. In early 2015, the Spokane Police Department (SPD) leadership devised a plan for a staggered rollout of

BWCs to all patrol officers in two phases ($n = 149$).⁷ The leadership worked with the authors to randomize the process by which officers were selected for the first (May 2015; Treatment group [$n = 82$]) and second (November 2015; Control group [$n = 67$]) phases of the deployment.⁸ The officers in each group received the TASER Axon Body 1 camera⁹ on a rolling schedule, as groups of officers were trained on consecutive Fridays during the two deployment months.¹⁰ The authors compared both groups across officer demographics, rank, years of service, and pre-RCT rates of use of force and complaints. No differences reached statistical significance (Table 1).

The SPD policy directs officers to record any law enforcement activity, including self-initiated citizen contacts, and to continue recording until the interaction or activity concludes.¹¹ Officers are given discretion to not record if doing so would jeopardize safety and/or the ability to perform

⁷ SPD implemented a small-scale pilot study of BWCs in fall 2014, involving approximately 20 volunteer officers. This pilot study occurred prior to the authors’ collaboration with the agency, though most of the pilot study officers continued to wear their BWCs up to the start of the RCT. Those volunteers who opted to stop wearing the BWC largely cited their state’s law governing public records requests (i.e. very liberal with regard to access), and the lack of a clear department policy at the time, as reasons for withdrawing from the pilot.

⁸ SPD provided the authors with a complete list of all officers, corporals, and sergeants assigned to patrol. Officers were randomly assigned by the authors to either the Treatment or Control group using the random number generator in Microsoft Excel. There were 12 departures from random assignment (8% departure rate). Eight of the randomization departures involved officers who participated in the department’s BWC pilot study prior to the phased rollout, were randomly assigned to the Control group, but asked to keep their BWCs. The department leadership and authors agreed to re-assign those officers to the Treatment group. The remaining departures occurred as a result of officers missing their assigned BWC training because of injury, family leave, vacation, or similar reasons. Four officers were removed from the study because they retired or transferred to a non-patrol assignment during the RCT period (and were no longer assigned a BWC).

⁹ This model features a 30 second ‘buffer’, wherein the camera continually records video (without audio) for the 30 s prior to camera activation.

¹⁰ The BWC training was included as part of an 8-h required use of force report writing training. Training was completed by the agency’s academy instructors, and occurred in two parts. The first part consisted of classroom-based instruction, which focused on laws and policy governing use of the cameras. Officers were also trained in BWC operational use. The second part consisted of scenario-based training, in which officers participated in mock citizen interactions and use of force scenarios while wearing the BWC. Following the mock scenarios, officers learned to complete reports incorporating the video evidence. One of the authors observed the BWC training on several occasions. For Treatment officers, the RCT began on the day they received a camera in the training course in May 2015. All activity that occurred prior to that training day is considered pre-RCT activity. The same principle applies for the Control officers who received their BWC on a rolling schedule in November 2015.

¹¹ When a video is recorded, officers are instructed to label it using their mobile devices. At the end of each shift, they are required to dock their cameras, during which time all videos are automatically uploaded to TASER’s cloud-based storage system, Evidence.com. Officers do not have access to manipulate the video in any way on either their mobile devices or on Evidence.com. All activity (viewing, tagging, notations, etc.) is documented in the audit trail on Evidence.com and cannot be altered.

Table 1: Characteristics of study officers, by group

	Treatment group (<i>n</i> = 82)	Control group (<i>n</i> = 67)	Total (<i>n</i> = 149)
Male (%)	91.5	83.6	87.9
White (%)	93.9	95.5	94.6
Rank (%)			
<i>Officer</i>	80.5	76.1	78.5
<i>Corporal</i>	9.8	10.4	10.1
<i>Sergeant</i>	9.8	13.4	11.4
Years of service	Mean=12.77 SD = 7.87	Mean= 14.30 SD = 7.03	Mean=13.46 SD = 7.52
Monthly use of force ^a	Mean=0.97 SD = 0.44	Mean=1.06 SD = 0.49	Mean=1.02 SD=0.46
Monthly complaints ^a	Mean=0.32 SD = 0.38	Mean=0.40 SD = 0.43	Mean=0.36 SD = 0.41

^aMonthly use of force and complaints were standardized per 1,000 calls for service, per group.

their law enforcement duties.¹² The body camera does not visually indicate to citizens that they are being recorded, and the agency's policy does not require that officers notify citizens that they are being recorded. In a separate study, the authors interviewed 249 Spokane citizens who had BWC-recorded encounters with police officers, and only 28.5% were aware they had been recorded (White *et al.*, forthcoming).

The SPD provided officer-level measures of use of force, internal complaints, citizen complaints, and officer injuries, from 1 January 2013 through 30 April 2016 for all 149 officers in the study.¹³ This period includes 28 months pre-RCT (January 2013–April 2015), 6 months of the RCT (May 2015–October 2015), and 6 months post-RCT (where both groups have BWCs; November 2015–April 2016)—for a total study period of 40 months. The authors calculated standardized monthly rates of each measure by dividing the monthly outcome total for each officer group by the number of calls responded to by each group, and multiplying by 1,000 (e.g. for each group, monthly rate of

force = [# force incidents per month/# calls per month] * 1,000). Call activity includes both citizen and officer-initiated calls. Several sets of analyses were carried out. First, the authors descriptively examine long-term trends in each outcome measure with the two officer groups to assess general change over time. We also employ difference-in-difference (DID) estimations to test variation in outcomes among the groups over time (DID provides a fixed-effect estimation of the intervention's impact on both groups). The authors then conducted a more focused analysis of monthly change by comparing outcomes during 6-month intervals, beginning in January 2013 and including the pre-RCT (11/14 – 4/15), RCT (5/15 – 10/15), and post-RCT (11/15 – 4/16) periods. Independent and paired-sample *t*-tests are employed to compare within- and between-group change across the 6-month time periods.¹⁴ The authors also examine change in the percent of each group recording an event (force, complaint) during the pre-RCT, RCT, and post-RCT periods. The authors conducted power analysis with GPower and the results

¹² Data regarding activation compliance is not yet available. The authors are currently working with SPD to gather meta-data from Evidence.com, which will be analysed in conjunction with call data. The department's CAD/RMS system and Evidence.com are not integrated, and as a consequence, the activation compliance analysis is very labor intensive.

¹³ Use of force and complaint data were provided by the department's Internal Affairs unit. The officer injury variable was captured from the department's official use of force reports, which are publicly available on the SPD website. In short, the authors applied the department's official definitions of use force, complaints, and officer injuries.

¹⁴ All of the analyses are conducted with the 12 randomization departures remaining in their final group. The authors also conducted the analysis with the 12 departures removed from the study (*n* = 137). Those analyses are not presented here given space constraints, but there were no differences in the findings using this alternate approach.

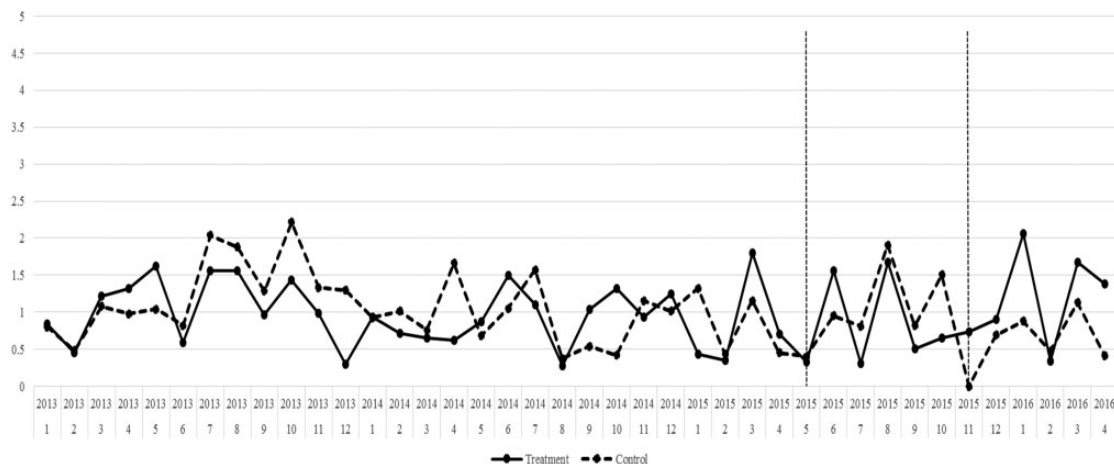


Figure 1: Use of force rates by officer group, January 2013–April 2016.

indicate weak statistical power across the outcomes (force [0.28], complaints [0.07], officer injuries [0.15]) because of low base rates.

Results

Use of force

Figure 1 shows monthly use of force rates by officer group, standardized by call activity, with vertical lines representing the start of the first (May 2015) and second phases (November 2015) of BWC roll-out. Use of force by police is an uncommon event (both groups average about one use of force incident per month, per 1,000 calls). The standardized trend over the entire study period is relatively flat for both officer groups, ranging between 0.5 and 2.0 incidents per month. Table 2 shows the DID estimates were not significant. Table 2 also shows mean use of force rates between groups during 6-month intervals periods, with a specific focus on the pre-RCT (11/14 – 4/15), RCT (5/15 – 10/15), and post-RCT (11/15 – 4/16) periods. None of the within- or between-group differences reach statistical significance (e.g. *t*-test results), and patterns in use of

force are inconsistent over time (e.g. a notable spike in 5/13 – 10/13). There are some interesting trends in the pre-RCT, RCT, and post-RCT periods. Use of force by the Treatment group declined by 8% following BWC deployment (0.91 to 0.84), despite stable call activity.¹⁵ During that same time, use of force among the Control group increased by 17%. Once the Control group was assigned BWCs, their use of force declined by nearly 50% (1.07 to 0.60).¹⁶ Finally, the decline in use of force was temporary for the Treatment group, as their post-RCT use of force increased by 27 percent (from 0.84 to 1.18). Table 3 shows these trends in terms of the percent of each group with a use of force during the pre-RCT, RCT, and post-RCT periods. For example, the percentage of the Treatment group with a use of force remained relatively flat over all three periods (from 24.4 percent to 28.0 percent), but the percentage of the Control group with a use of force (pre-post BWC deployment) declined by 39%, from 26.9% to 16.4%.

Complaints

Figure 2 shows the standardized rates of complaints against officers.¹⁷ Complaints rose steadily in the

¹⁵ The number of calls for the Treatment group declined by one percent from pre-RCT (38,270) to RCT (37,891) periods.

¹⁶ During this time, call activity declined by 12 percent for the Control group (from 30,332 RCT to 26,762 post-RCT).

¹⁷ Given the very low rate of complaints per month, the authors merged citizen and internal complaints into one measure.

Table 2: Mean outcomes and difference-in-difference estimations by officer group

	1/13 – 4/13 Rate (n)	5/13 – 10/13 Rate (n)	11/13 – 4/14 Rate (n)	5/14 – 10/14 Rate (n)	Pre-RCT 11/14 – 4/15 Rate (n)*	RCT 5/15 – 10/15 Rate (n)*	Post-RCT 11/15 – 4/16 Rate (n)*	Difference-in- Difference Coeff. (SE)**
Use of force								
Control	0.84 (17)	1.54 (54)	1.17 (37)	0.77 (26)	0.92 (28)	1.07 (33)	0.60 (16)	0.27
Treatment	0.96 (23)	1.29 (49)	0.70 (26)	1.01 (41)	0.91 (36)	0.84 (33)	1.18 (42)	(0.26)
Complaints								
Control	0.59 (12)	0.95 (33)	0.21 (7)	0.08 (3)	0.23 (7)	0.28 (8)	0.15 (4)	-0.004
Treatment	0.26 (6)	0.67 (26)	0.24 (9)	0.15 (6)	0.24 (9)	0.05 (2)	0.19 (7)	(0.13)
Officer injuries								
Control	0.10 (2)	0.17 (6)	0.03 (1)	0.00 (0)	0.10 (3)	0.04 (1)	0.07 (2)	-0.02
Treatment	0.08 (2)	0.14 (5)	0.07 (3)	0.15 (6)	0.02 (1)	0.05 (2)	0.05 (2)	(0.05)

*None of the within- and between-group mean differences reach statistical significance ($P < 0.05$).

**None of the difference-in-difference estimations reach statistical significance ($P < 0.05$).

Table 3: Group percentages of complaints and use of force

	Pre-RCT 11/14 – 4/15 % (n)	RCT 5/15 – 10/15 % (n)	Post-RCT 11/15 – 4/16 % (n)
Use of force			
Control	28.4 (19)	26.9 (18)	16.4 (11)
Treatment	24.4 (20)	25.6 (21)	28.0 (23)
Complaints			
Control	10.4 (7)	9.0 (6)	4.5 (3)
Treatment	11.0 (9)	2.4 (2)	6.1 (5)

first part of 2013 for both officer groups before dropping substantially and remaining at a low rate throughout the rest of the study period. The rate of complaints becomes near-zero after the start of the RCT and rarely moves above 0.5 for either group. The DID estimates were not significant (see Table 2). The within- and between-group differences in the 6-month intervals are not statistically significant—though again there are post-BWC declines for both groups. For the Treatment group, Table 2 shows a nearly 80% drop in complaints, from 0.24 pre-RCT to 0.05 RCT (from 9 to 2). Post-BWC deployment, complaints for the Control group drop by nearly 50%, from 0.28 (8)

to 0.15 (4). Again, there is an increase in complaints among the Treatment group during the post-RCT period (from 0.05 [2] to 0.19 [7]). Table 3 shows the percentage of the Treatment group with a complaint decreased from 11.0% (pre-RCT) to 2.4% (RCT) – or a 78 percent decline. After the Control group was assigned BWCs, the percentage of the group with a complaint dropped from 9.0% to 4.5% (percent change = 50%).

Officer injuries

Figure 3 shows officer injuries that occurred during use of force incidents, again standardized by monthly group call activity.¹⁸ Officer injuries are

¹⁸ The injury data only includes incidents involving the 149 officers in the study. Injuries of officers who are not in the study are excluded, as are injuries that did not result from a police–citizen encounter (e.g. off-duty; traffic accident).

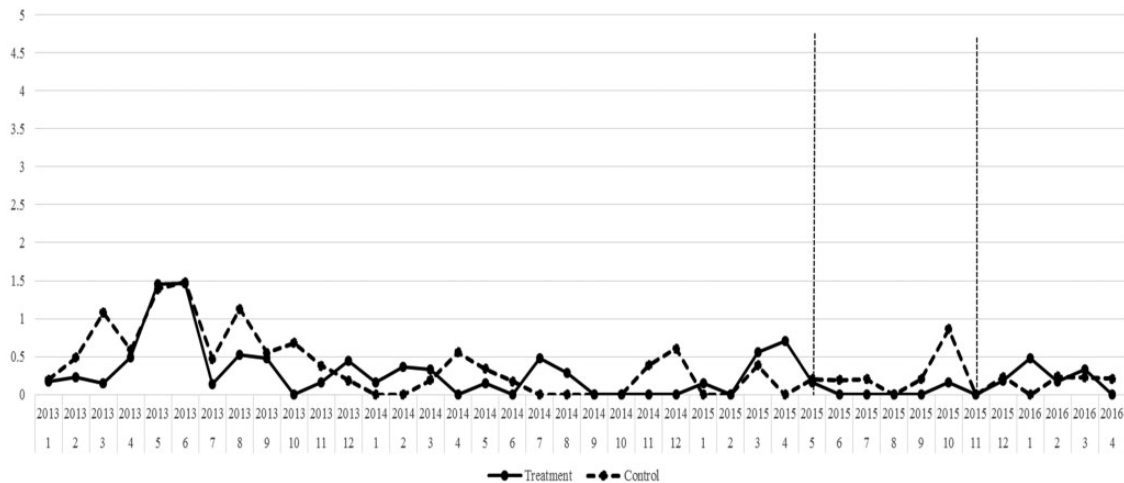


Figure 2: Complaint rates by officer group, January 2013 – April 2016.

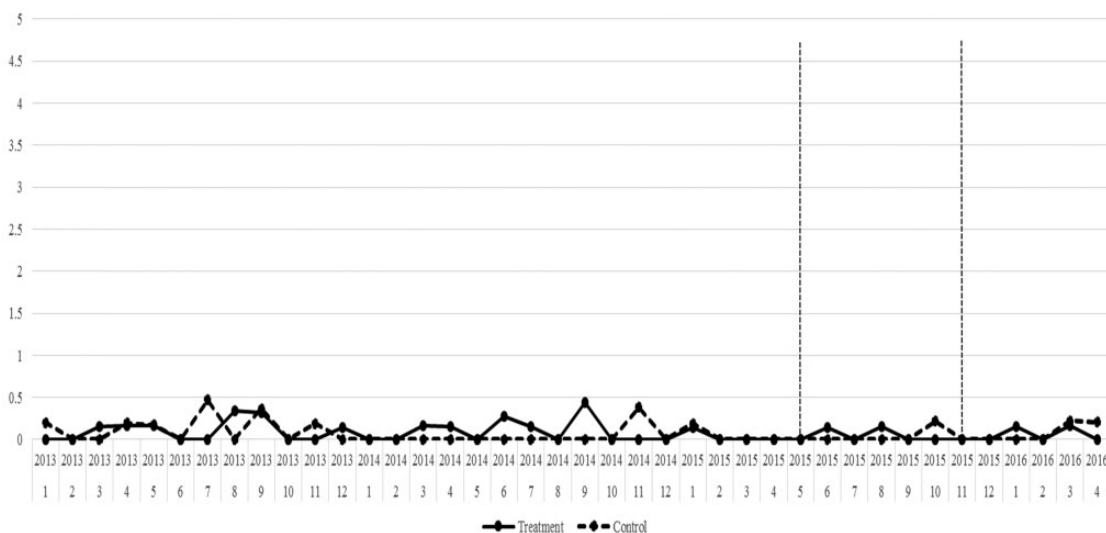


Figure 3: Officer injury rates by officer group, January 2013–April 2016.

extremely rare, and their prevalence is not affected by BWC deployment. Table 2 shows no statistically significant changes in officer injuries over time.

Discussion

Several important themes emerged from the current study’s results. First, the outcomes of interest are rare. Both officer groups averaged about one use

of force per month per 1,000 calls. Complaints and injuries were even less common. Use of force and complaints against officers are typical outcomes in police research, and low base rates are a common issue. For example, prior research has consistently shown that police use of force occurs in less than 2% of all police citizen encounters (Hickman *et al.*, 2008). Moreover, many of the most influential BWC studies have examined small police

departments (Rialto, CA) or large departments with limited BWC deployment (Phoenix, AZ), which tends to compound the low base rate issue.¹⁹

The second theme involves the noteworthy though nonsignificant declines in outcomes following BWC deployment. Though statistical power was weak, the outcomes clearly trended in a positive direction. For example, complaints declined when each officer group was assigned BWCs. Use of force followed a similar pattern after BWC deployment for the Control group. The positive trends are perhaps best captured in the percentage of each group with an event, before and after BWC deployment: the percentage of the Treatment and Control groups with a complaint declined by 78 percent and 50%, respectively; and the percentage of the Control group with a use of force declined by 39% (Table 3). Statistical significance aside, one could make a persuasive argument about the practical significance of the findings. In fact, SPD leadership was quite pleased with the reductions in force and complaints when briefed about the results, and unconcerned about statistical significance.

Moreover, the positive trends for the Treatment group were temporary. Use of force and citizen complaints increased during the post-RCT period, and the uptick for the Treatment group occurred during the same time the Control group (with their newly assigned BWCs) posted declines in those same outcomes. The reason for this trend in the SPD remains unclear. Part of the trend may be explained by a policy change. Beginning in January 2016, the department implemented a new use of force policy that required officers to record a larger universe of behaviours as reportable force. The policy change may have influenced our findings. Given that there are only 3 months of data after the policy change, it is not possible to fully

explore the effect of the change on use of force prevalence. As the authors collect additional data over time, they will be able to more formally investigate the policy change. Alternatively, perhaps the Treatment officers became more cautious or restrained in the months after they were assigned BWCs because of the novelty of the technology, or because they were concerned about how supervisors might review their behavior. Prior research on officer perceptions of BWCs has identified supervisor review as a common concern (Gaub *et al.*, 2016). But as time passed, officers may have become more comfortable with the technology and the potential for supervisory review. As a result, their BWC-generated restraint dissipated over time and they returned to their normal pre-BWC behavior.²⁰ Of course, it is important to bear in mind that study officers' 'normal pre-BWC behavior' rarely involved force or produced citizen complaints. Nevertheless, the potential for BWC-generated benefits to wane over time warrants additional research attention.

Thirdly, recent studies conducted by Ariel and colleagues raise important questions about the impact and consequences of BWCs. For example, Ariel *et al.* (2016c) reported a higher rate of assaults on BWC officers compared to officers without cameras. The authors offered several potential explanations for the connection, including changes in officer reporting patterns and increased vulnerability to assault as officers became less assertive. The finding has received significant media attention and was recently cited by the Boston police union in their lawsuit seeking an injunction to stop the department from creating a BWC program (Levenson and Allen, 2016). Ariel *et al.* (2016c, p. 10) note 'the question about the reason for the increased assaults is not something that can be left to debate and must be [scrutinized] empirically'.

¹⁹ The Rialto study involved all 54 patrol officers in the department. The studies in Mesa (Mesa Police Department, 2013), Phoenix (Katz *et al.*, 2014), and Orlando (Jennings *et al.*, 2015) involved a deployment of approximately 50 BWCs, with a similarly sized group of non-BWC officers for comparison.

²⁰ The authors are collecting additional data for the Control group officers to determine whether the temporary effect occurred for them as well.

In the current study, the authors examine officer injuries pre- and post-BWC deployment for both officer groups. Officer injuries are very rare in Spokane, and there is no associated increase in the outcome as each officer group was assigned BWCs. Admittedly, officer injuries and assaults on officers are not the same measure. Not every assault will produce an officer injury. Alternatively, our focus on officer injury serves as a good proxy measure for the most serious assaults on officers—those that are severe enough to generate a physical injury and subsequent report. In short, we find no association between BWCs and officer injury. And we concur with Ariel *et al.* (2016c) on the immediate need for additional research on the question.

Last, Ariel *et al.* (2016a) recently suggested that officers without BWCs may still be positively influenced by the technology. The authors use the term ‘contagious accountability’ to describe a process, whereby the benefits of BWCs diffuse beyond those assigned to wear the technology:

We conclude that officers changed their behavior in encounters during control conditions as well as treatment conditions. To use an analogy from the medical world, suspects were not given the medication during control conditions, but officers were. The treatment effect carried over to no-treatment shifts as well, and officers’ behavior was affected by it (Ariel *et al.*, 2016a, p. 15).

The prospect of ‘contagious accountability’ or ‘diffusion of benefits’ is intriguing, especially for large departments that may need several years to fully deploy BWCs to their entire patrol force.²¹ The contagion or diffusion effect can work in one of several ways. In the Ariel *et al.* (2016a) study, the researchers randomized shifts rather than officers. As a result, an officer would be assigned a BWC one week, but the following week that same officer on that same shift may not receive a BWC. The

contagion effect in this case involves within-officer change. The officer changes his/her behavior during a BWC shift, and the behavior change carries over to the officer’s other non-BWC shifts. The contagion effect can also occur in a phased rollout of BWCs like in the current study, where some officers have BWCs while others do not. In small and medium departments (as well as large departments with small, geographically concentrated rollouts), officers often interact with each other throughout the day, and multiple officers may respond to certain calls. If multiple officers respond to a call and at least one of those officers has a BWC, there is the potential for diffusion of benefits.

Our examination of a potential contagion effect in the SPD shows that, during the 6-month RCT (when only half of the study officers were assigned BWCs), approximately 20% of calls involved both a BWC and a non-BWC officer. Interestingly, there is no evidence of a contagion effect in the current study. Control group officers did not show reductions in use of force and citizen complaints during the RCT period. Perhaps contagious accountability is more difficult to generate between officers (i.e. some officers are assigned BWCs, others are not) than within-officers (i.e. an officer alternately wears the technology or not according to shift). Or it could be that 20% of calls is not enough to generate a contagion effect. Regardless, the potential for ‘contagious accountability’ deserves additional research attention.

The results from the current study should be interpreted within the context of a number of limitations. First, the study relies entirely on official data from the SPD. Researchers have criticized official data in terms of accuracy and completeness, particularly with regard to sensitive activity such as use of force (e.g. Manning, 2009). Secondly, the current study examines one medium-sized department in the western USA, and the results may not be generalizable. Thirdly, the outcomes of interest occur at a very low base rate, which limited the analysis.

²¹ In research terms, this effect is called treatment contamination.

Moreover, the interplay between officer non-reporting of events and BWC activation remains unknown (i.e. officers may be less likely to report use of force if they did not activate the BWC).²² Last, although the authors employed a rigorous RCT, there were several limitations with the research design, most notably the departures from random assignment (8%). Despite the aforementioned limitations, the current study represents a rigorous test of BWCs that adds to the growing body of literature on the positive impact of the technology.

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²² There are a few caveats to this concern. First, officers were not asked to report any additional data above and beyond what they are required to do per department policy. Moreover, the SPD leadership and line officer union negotiated a tolerant policy with regard to activation failures. The department leadership agreed officers would not be disciplined for failure to activate during the study period, as they were getting accustomed to the new technology.

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