

Officer Perceptions of Body-Worn Cameras Before and After Deployment: A Study of Three Departments

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Abstract

Over the past few years, several events have highlighted the strained relationship between the police and residents in many communities. Police officer body-worn cameras (BWCs) have been advocated as a tool by which police–community relations can be strengthened, while simultaneously increasing transparency and accountability of police departments. Support for BWCs from the public and federal government is strong, and some studies have examined police perceptions of BWCs. However, comparisons of officer perceptions of BWCs in different departments are lacking, as are assessments of officer attitudes pre- and post-BWC deployment. This study compares officer perceptions of BWCs in three police departments in the western United States between 2013 and 2015, both before and after BWC program implementation. The similarities and differences among officer perceptions across departments are examined, and the authors consider the implications of findings for police departments moving forward with BWC technology.

Keywords

police, body-worn cameras, technology

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Introduction

High-profile citizen deaths since the summer of 2014 have thrust the issue of police brutality and excessive force to the forefront of public discourse. Police departments now find themselves under intense public scrutiny and citizens are calling for increased police accountability and transparency. This controversy has led to the proliferation of a relatively new technology across the United States—police officer body-worn cameras (BWCs). BWCs have become popular because of their many purported benefits, including increased transparency and accountability, reductions in use of force and citizen complaints, better evidence collection and documentation, uses for officer training, and their utility for adjudicating complaints by citizens (Miller, Toliver, & Police Executive Research Forum, 2014; White, 2014a). According to data from the Bureau of Justice Statistics, nearly one third of police departments used BWCs in 2013 (Reaves, 2015), and in September 2015, the U.S. Department of Justice (2015) announced grant awards to 73 local and tribal agencies totaling \$19.3 million for the purpose of implementing or enhancing a BWC program. Abroad, law enforcement agencies have used BWCs for over a decade, primarily in the United Kingdom and Canada (Goodall, 2007; Stratton, Clissold, & Tuson, 2014).

Yet, policing research has lagged behind diffusion of BWCs (White, 2014a). Though there are a number of internal police department reports discussing results of pilot studies and larger scale implementations, only a handful of peer-reviewed studies have addressed BWCs in recent years. This small body of research has consistently found that BWCs can significantly reduce use of force and citizen complaints (Ariel, Farrar, & Sutherland, 2015; Jennings, Fridell, & Lynch, 2014; Jennings, Lynch, & Fridell, 2015; Katz, Choate, Kurtenbach, & White, 2015; Mesa Police Department [MPD], 2013). These findings are important as police departments look for tools that help officers do their job more effectively while still upholding constitutional principles (Miller et al., 2014).

Other studies have focused on police departments' internal acceptance of the technology, with generally positive results (Jennings et al., 2014, 2015; Katz et al., 2015; Roy, 2014). Internal buy-in of the technology is imperative, as benefits like transparency and better officer and citizen behavior can only be attained if officers turn on and use the cameras. A variety of factors affect officer perceptions of BWCs, including their agency's planning and implementation process, administrative policy regarding use of BWCs, the experiences of their colleagues and neighboring departments, and their own experiences in the field. The small number of studies that have addressed officer perceptions of BWCs have two primary limitations: (a) they focus on individual police departments and (b) researchers have not assessed attitudes pre- and post-BWC deployment to gauge changes in officer acceptance of the technology over time.

The current study will add to this body of literature by using the same survey instrument to understand perceptions of BWCs in the Phoenix (AZ) Police Department, the Spokane (WA) Police Department, and the Tempe (AZ) Police Department. Survey administration was conducted both before and after BWC implementation in each department in 2013 (Phoenix) and 2015 (Spokane and Tempe). The authors explore three research questions:

1. Is there significant variation in officer perceptions of BWCs predeployment across departments?
2. Is there significant variation in officer perceptions of BWCs postdeployment across departments?
3. Is there significant change in officer perceptions of BWCs over time (pre- and postdeployment) within departments?

Examination of officer attitudes regarding BWCs, both over time and across departments, will allow the authors to assess the integration of BWCs in different environments and can inform adoption of BWCs more broadly.

Literature Review

Public reaction to the deadly shootings and in-custody deaths of Michael Brown, Eric Garner, Freddie Gray, and others in 2014 and 2015 strongly demonstrate that police–community relationships are a serious social problem, and BWCs are considered by many to be the solution. Researchers in the United Kingdom, Canada, and the United States have recently begun to explore the benefits and drawbacks of BWCs, though the empirical evidence remains limited and generally lacks methodological rigor. The purported benefits of BWCs are similar to those of in-vehicle video or dashboard cameras—namely, accountability and transparency, improved officer and citizen behavior, better incident review and complaint resolution, and assistance in prosecution or case resolution (Goodall, 2007; International Association of Chiefs of Police, 2003; Miller et al., 2014; White, 2014a).

Organizational transparency and accountability for the police can lead to better police–community relations and increase trust in the police, which strengthens police legitimacy (White, 2014a). Citizens generally agree that BWCs will help achieve these objectives. In an evaluation of BWC trials in Renfrewshire and Aberdeen (Scotland), citizens from both jurisdictions were contacted for participation in an online survey about BWCs (ODS Consulting, 2011). Of the 97 respondents in Renfrewshire, 49% said they felt safer as a result of BWCs and 64% felt that BWCs would reduce crime in their neighborhoods. In Aberdeen, 37% of the 701 respondents said that BWCs would make them feel safer, though 57% felt the technology would make their communities safer. Overall, 64% of Renfrewshire respondents and 76%

of Aberdeen respondents supported the use of BWCs on all officers (ODS Consulting, 2011). Scholars in Hampshire (England) studied the Isle of Wight constabulary, which issued BWCs to all officers in 2013, and found that 82% of the public favored all officers wearing cameras (Ellis, Jenkins, & Smith, 2015). Researchers in Las Vegas (NV) administered an online survey to a national sample of 635 U.S. adult residents (Sousa, Miethe, & Sakiyama, 2015). Over 80% of respondents believed that, when wearing BWCs, police officers will behave more respectfully toward citizens and will use excessive force less frequently. Additionally, two thirds believed that BWCs improve police relationships with citizens, and 61% believed that citizens will have greater trust in police because of BWCs (Sousa et al., 2015). Aside from this study, however, American researchers have paid virtually no attention to the views of citizens, though additional projects are in progress (Lum, Koper, Merola, Scherer, & Reioux, 2015).

Officers also have positive attitudes about BWCs and acknowledge the benefits for organizational accountability and transparency. The Mesa (AZ) Police Department tested BWCs for 1 year using a quasi-experimental design of 50 patrol officers who wore BWCs (25 randomly selected and 25 volunteer) and their matched comparisons who did not wear BWCs (MPD, 2013; Ready & Young, 2015; Roy, 2014). Eighty percent of officers believed that BWCs would improve the quality of evidence and yield more accurate accounts of encounters, and 77% agreed that BWCs would make officers act more professionally (MPD, 2013). A randomized controlled trial of officers in the Orlando (FL) Police Department found similarly positive reactions to BWCs. Ninety-five patrol officers volunteered to be randomly assigned to either wear a BWC ($n=46$) or not wear a BWC ($n=43$) for 12 months (Jennings et al., 2014). Nearly 63% of officers believed that their agency should adopt BWCs for all officers and 77% agreed they would feel comfortable wearing the cameras (Jennings et al., 2014).

BWC proponents argue that the cameras can create a “civilizing effect” or improved behavior of both citizens and officers. This belief is grounded in psychological and anthropological literature demonstrating that people behave differently when they are observed or recorded (Farrar, 2013; Munger & Harris, 1989; Priks, 2014). Better behavior on both sides de-escalates situations and reduces both citizen complaints and police use of force (White, 2014a). The effect of BWCs on citizen behavior is the subject of many ongoing research projects, though none are peer reviewed and published. Preliminary findings from Las Vegas (NV), however, indicate that few citizens react to the presence of BWCs (Braga, Coldren, Rodriguez, & Sousa, 2015). In the study, researchers recruited 389 volunteers from the Las Vegas Metropolitan Police Department to participate in a randomized controlled trial of BWCs; from those study officers, 50 were randomly selected to participate in semistructured interviews. In these interviews, officers typically reported very little change to both their own

behavior and that of citizens, though in some cases, citizens either became more compliant or “played” to the camera (Braga et al., 2015).

Studies assessing the link between BWCs and officer behavior focus on citizen complaints and use of force incidents as measures of officer behavior and have consistently found declines in both outcomes for officers using BWCs.¹ Mesa BWC officers experienced a 60% drop in citizen complaints, compared to a 36% increase in complaints for non-BWC officers (MPD, 2013). The Phoenix (AZ) Police Department conducted a 15-month quasi-experimental study of police officers in one precinct, wherein 56 patrol officers used BWCs and 50 patrol officers did not. Treatment officers experienced a 23% decline in citizen complaints, compared with an 11% increase for comparison officers and a 45% increase across remaining Phoenix patrol officers (Katz et al., 2015).

In Rialto (CA), researchers randomized patrol shifts, rather than individual officers, such that over 12 months, 988 patrol shifts were assigned to either experimental conditions (officers used a BWC) or control conditions (officers did not use a BWC; Ariel et al., 2015; Farrar, 2013). After BWC deployment, citizen complaints in Rialto dropped by 88% to 92% and use of force incidents dropped by 56% to 61% compared with the preceding 3 years, (Ariel et al., 2015). Renfrewshire, Aberdeen, and Plymouth (England) also reported a relationship between wearing a BWC and reductions in both citizen complaints and assaults on officers (Goodall, 2007; ODS Consulting, 2011). Researchers in the Isle of Wight study determined the constabulary received 15% fewer citizen complaints in areas patrolled by BWC officers, compared with a 5% reduction for the rest of the county (Ellis et al., 2015). Orlando researchers concluded that BWC officers generated significantly fewer serious citizen complaints and use of force incidents in the year following BWC implementation (Jennings et al., 2015). In Las Vegas, many of the officers who were interviewed noted that BWCs prevented misconduct complaints (Braga et al., 2015).

Some evidence indicates, however, that officers believe BWCs would have a greater effect on the actions of other officers compared with their own. For example, 43% of Orlando officers believed that BWCs would make officers more likely to follow department rules and procedures, whereas only 20% believed it would change their own behavior in this regard. Likewise, only 3% of officers believed that BWCs would reduce their own use of force, compared with 20% who believed that BWCs would reduce use of force agency-wide (Jennings et al., 2014).

Contrary to this evidence, Grossmith et al. (2015) found no significant differences in citizen complaints between treatment and control teams in a yearlong cluster randomized controlled trial of 2,060 London (England) officers. The authors also reported no difference between groups in the time required to resolve complaints, though results from officer perception surveys indicated that treatment officers were significantly more likely to feel protected against

complaints because encounters with citizens would be recorded (Grossmith et al., 2015).

BWCs can assist in timely resolution of citizen complaints and review of critical incidents (White, 2014a). As supervisors can only directly observe a small percentage of encounters and must evaluate complaints with imperfect information about the situation and an officer's response (Engel & Worden, 2003), BWCs provide a wider lens through which supervisors can make determinations about the appropriateness of officers' decisions. Likewise, it is possible that BWCs can aid in resolving lawsuits against the police (White, 2014a). As a result of reduced complaints and lower rates of use of force, departments likely also benefit from lower costs (e.g., time, resources, and money) associated with investigating complaints and force incidents (White, 2014a).

Finally, both officers and downstream criminal justice actors (e.g., prosecutors and judges) recognize the evidentiary value of BWCs; camera footage is especially useful in domestic violence incidents, which are notoriously difficult to prosecute without cooperative victims (Miller et al., 2014; White, 2014a). In a randomized controlled trial of BWCs in Essex County (England), wherein officers were assigned to either a treatment group wearing BWCs ($n=70$) or a control group not wearing BWCs ($n=238$), researchers studied the effects of BWCs on domestic violence incidents (Owens, Mann, & Mckenna, 2014). Officers in the study noted that BWC footage of initial contact in domestic violence incidents was able to capture the emotions, injuries, and physical damage that are present at the time of an offense. They also explained that the footage supported initial statements from victims, even if they recanted later (Owens et al., 2014). Similarly, officers in Las Vegas described the utility of BWCs for evidence gathering, particularly in the ability of BWCs to better "narrate" events (Braga et al., 2015).

Beyond police departments, jurisdictions have observed an increase in guilty pleas, thus alleviating overburdened court systems from costly trials. Researchers in Phoenix (AZ) examined the effects of BWCs on domestic violence case processing and found that, compared with non-BWC encounters, those with BWC footage were more likely to proceed through the criminal justice process at each relevant stage (Katz et al., 2015). In Renfrewshire, Aberdeen, and Plymouth, cases with BWC footage were more likely to be resolved with a guilty plea than go to trial (Goodall, 2007; ODS Consulting, 2011). Officers across the United Kingdom reported positive feedback regarding the use of footage in court, real-time evidence recording with far more accuracy, and a reduction in public order offenses and faster resolution of those that were committed (Goodall, 2007; Harris, 2010).

Though BWCs have many purported benefits, they also carry concerns. One of the primary concerns of BWCs that was not as prominent with in-vehicle cameras is that of both citizen and officer privacy. BWCs go wherever the officer

goes, so they film inside people's homes, hospital rooms, and other areas where people have at least some expectation of privacy (Miller et al., 2014; Stanley, 2015). As such, there is a question whether this sacrifice of public privacy in some circumstances is worth the benefits of accountability and evidence collection provided by BWCs (Stanley, 2015). Officers also question the impact of BWCs on their own privacy. Some police unions contend that BWCs constitute a change in working conditions that must be negotiated through a new union contract (White, 2014a). Officers in many jurisdictions have voiced concerns about supervisory "fishing expeditions" in which supervisors view footage in the attempt to "jam up" rank-and-file officers, especially those in precarious positions such as whistleblowers or union representatives (Stanley, 2015). Most departments have created policies with very strict rules governing when supervisors may view subordinates' footage, though some allow for random auditing and use of footage in performance evaluations (Miller et al., 2014; White, 2014a). Privacy concerns of all kinds are heightened by the fact that body-camera footage is a public record and therefore can be obtained through public records requests (Miller et al., 2014; Stanley, 2015). States widely vary in their public records laws and states with more liberal (i.e., more open) public records statutes must find balance between openness and accountability on one hand, and privacy on the other.

The decision to implement a BWC program is not one that should be taken lightly because it often comes with a hefty price tag. Direct costs associated with the purchase of the cameras pale in comparison to the immense costs associated with data storage and redaction (White, 2014a). For example, the Denver (CO) Police Department committed \$6.1 million to be paid over 5 years, which bought 800 cameras and associated data storage (Phillips, 2015). At between \$400 and \$600 per camera, the cameras themselves constitute approximately 8% of the contract total; thus, the cost of a body-camera program is much more than just buying the video hardware (Phillips, 2015). Additional personnel may also be required for redaction, project management, or training, a concern which flows downstream to the courts.

Finally, officer buy-in for BWCs is a concern for most agencies (Miller et al., 2014; White, 2014a). In many cases, line-level officers worry that BWCs will be used by supervisors to jam up the rank-and-file. The vast majority of police reforms over the past 50 years have not included line-level officers in their development (Bayley, 2008), yet they rely on officer buy-in to be implemented well. Like many other police reforms, police officer BWCs have largely been instituted in a top-down, outside-inside manner; in other words, they are proffered by researchers or politicians outside police departments and implemented by police executives from the top of the hierarchy down to the rank-and-file (Bayley, 2008). As with other policing initiatives that change the nature of police discretion (see, e.g., Lurigio & Skogan, 1994), BWC programs rely on line-level officers to comply with department procedures regarding camera

activation, video tagging and categorizing, and video footage upload. Compliance with these processes is likely correlated with their attitudes about BWCs and their perceived benefits. Thus, understanding officer perceptions of BWCs is imperative to a successful BWC program. This study builds on the small body of officer perception literature through an examination of officer perceptions of BWCs in three police departments over time, both before and after deployment.

Data and Methods

Sample

The authors surveyed police officers from the Phoenix (AZ) Police Department, Tempe (AZ) Police Department, and Spokane (WA) Police Department. The surveys were conducted as part of larger evaluations examining the impact and consequences of officer-worn body cameras in each of the three departments. Each department was selected because the leadership had already made the decision to adopt body cameras and was in the process of implementing a BWC program, allowing the researchers to examine outcomes before, during, and after deployment.²

The cities of Tempe (AZ) and Spokane (WA) use Taser Axon BWC systems and both agreed to participate in randomized controlled trials involving the departments' patrol divisions. In Spokane, 153 patrol officers were randomly assigned to treatment ($n=80$) or control ($n=73$) conditions. In Tempe, 205 patrol officers were randomly assigned to treatment ($n=102$) or control ($n=103$) conditions.³ Officer perception surveys were distributed during roll call briefings in each city both before and after camera deployment. In Phoenix, the study was carried out in the Maryvale precinct, which is composed of two patrol areas (81 and 82).⁴ Area 82 received VIEVU cameras ($n=56$) and Area 81 did not ($n=50$). Officer perceptions surveys were administered four times prior to camera deployment and four times following camera deployment.

Survey Instrument

The survey instrument includes 33 questions covering a range of topics regarding officers' perceptions of body cameras, including: (a) the effect of body cameras on completing incident reports, (b) the use of body camera footage as evidence, (c) the effect of body cameras on citizen and officer behavior, (d) the ease of use of the cameras, and (e) officers' general perceptions and recommendations about the value of the technology in law enforcement (see Appendix A). For each of the 33 perception questions, officers were asked to indicate whether they strongly agree, agree, disagree, or strongly disagree with each statement. Totals were

generated, indicating the percentage of the total officers who completed the survey who agreed or strongly agreed with each statement.⁵ The survey also captures the number of complaints received by officers in the past 30 days as well as basic demographic questions, including age, race/ethnicity, sex, rank, unit assignment, years employed, and educational attainment.

Data

Table 1 shows the timeline and completion rates of surveys in each department. In Phoenix, surveys were completed in mid-March 2013 and in late April 2013 (e.g., 2 weeks before and 2 weeks after implementation). Response rates in Phoenix ranged from 77% to 82% (n=82 predeployment and n=86 postdeployment).

In Spokane, predeployment surveys were completed in April 2015, and post-deployment surveys were completed in June 2015 (3–4 weeks before and after deployment). Response rates ranged from 82% to 92% (predeployment n=167; postdeployment n=103).⁶ In Tempe, predeployment surveys were completed in September 2015, approximately 6 weeks prior to deployment (n=166). Postdeployment surveys were completed 1 month after deployment in December 2015 (n=158). Response rates ranged from 77% to 81%.⁷

Results

Table 2 shows officer perceptions of BWCs predeployment for each of the three departments, and several themes emerge. First, officers in all three police departments believed that BWCs have evidentiary value. For example, across the departments, 78% to 80% of officers agreed that BWCs will produce more accurate accounts of incidents and 66% to 87% of officers agreed that BWCs improve the quality of evidence. They also saw the utility of BWCs in prosecuting domestic violence cases generally (47% to 64%), especially when the victim is unwilling to testify (49% to 70%).

Table 1. Survey Administration Timeline and Response in Phoenix, Spokane, and Tempe.

Department	Wave 1	Camera deployment	Wave 2
Phoenix (n = 106)	March 2013 (n = 82)	April 2013	April 2013 (n = 87)
Spokane (n = 153)	April 2015 (n = 140)	May 2015	June 2015 (n = 103)
Tempe (n = 205)	September 2015 (n = 166)	November 2015	December 2015 (n = 158)

Table 2. Pre-Deployment Perceptions in Each Site (Percentage Agree or Strongly Agree).

Pre-BWC deployment		Phoenix	Spokane	Tempe
Category	Question			
Completing incident reports	Officers spend less time completing paperwork	6.3	4.2	16.3
	More accurate accounts of incidents	77.5	80.1	80.2
	Improve quality of evidence	66.3	80.0	87.1
	Makes officers' job easier	11.3	18.6	40.8
Use of evidence in court	Easier to work with the prosecutor's office when submitting evidence	21.5	27.9	47.6
	Easier to prosecute DV offenders	46.9	57.9	63.9
	Help prosecute DV cases when victim is unwilling to testify	49.3	78.6	70.1
Citizen reaction	Citizens will be more cooperative	41.3	46.4	63.9
	Citizens will be more respectful	35.5	41.4	52.3
	Suspects less likely to resist arrest	21.3	20.7	29.3
	People will be generally less aggressive	35.1	36.4	49.0
	Cameras hurt 'police-community' relations	32.9	7.9	8.2
	Cameras will increase citizen complaints against officers	20.5	9.3	6.1
Police officer behavior	Officers will be less likely to give warnings	37.2	5.0	17.0
	Officers will have fewer contacts with citizens	64.6	30.7	23.8
	Officers will feel like they have less discretion	86.3	52.1	55.7
	Officers will be more cautious in making decisions	74.7	57.1	66.7
	Officers will act more professional	50.6	48.6	68.7
	Affects an officer's decision to use force	62.6	44.3	60.5

(continued)

Table 2. (continued)

Pre-BWC deployment			Phoenix	Spokane	Tempe
Category	Question				
Familiarity, comfort, and ease of use	Easy to locate and retrieve video for a specific event		30.0	37.9	44.9
	Equipment is easy to use		27.5	44.2	46.2
	Equipment is comfortable to wear		21.7	36.4	30.6
	Battery life of the camera is adequate		26.9	40.0	43.5
	Easy to download data at the end of shift		20.0	37.8	34.7
General perceptions	Body cameras are well received by coworkers		5.0	20.0	49.0
	Police benefit more from body cameras than citizens		32.5	64.2	66.7
	Wearing a body camera improves officers' job satisfaction		6.3	10.0	16.3
	Cameras improve officer training		42.5	45.0	70.1
	Cameras improve overall job performance		17.5	20.0	36.1
	Cameras tend to increase officer safety		13.8	11.4	23.1
Overall perceptions	Cameras should be expanded to other departments		17.7	40.7	63.2
	Cameras should be adopted throughout the city		13.9	39.3	63.3
	Advantages of body cameras outweigh the disadvantages		16.4	44.3	77.6

Note. BWC = body-worn camera.

Second, officers in all three police departments had significant concerns about the comfort and ease of use of BWCs. Less than half of surveyed officers in each department agreed that BWCs are easy to use. Concerns were especially high in Phoenix, where only 27.5% of officers agreed with that statement. Officers were particularly concerned about the ease of downloading footage at the end of a shift (20% to 38% agreement).

Third, Phoenix officers were more skeptical of BWCs and their positive effects, particularly when compared with Tempe officers. Their skepticism crosses a range of issues; for example, Phoenix officers questioned the effects of BWCs on citizen behavior (only 41.3% agreed that citizens will be more cooperative, compared with nearly 64% of Tempe officers). They also were unsure that BWCs would positively affect officer behavior (64.6% believed that officers will have fewer citizen contacts, compared with only 23.8% of Tempe officers). Overall, Phoenix officers were generally more negative about BWCs than officers in either Spokane or Tempe (16.4% of Phoenix officers believed that the advantages of BWCs outweigh the disadvantages, compared with 77.6% of Tempe officers). Notably, the perceptions of Spokane officers consistently fall between the Phoenix and Tempe officers. The potential explanations for the more negative views of Phoenix officers will be explored later.

Table 3 shows officer perceptions after BWC deployment, and again, the key trend involves the persistently negative views of Phoenix officers compared with the Tempe Police Department, with Spokane officers again in the middle. For example, Phoenix officers held more negative views regarding the potential for BWCs to improve evidence quality (52.4% compared with 91.8% of Tempe officers). Phoenix officers remained skeptical of BWCs' ability to generate cooperation among citizens (26.2% compared with 57% of Tempe officers). Officers in Phoenix also questioned their peers' acceptance of BWCs, as only 5.8% of surveyed officers agreed that cameras were well received by their coworkers, compared with 69% of Tempe officers. Additionally, more Phoenix officers believed that BWCs will make officers passive, resulting in fewer citizen contacts (68.2% compared with 22.8% of Tempe officers). Overall, Phoenix officers did not believe that BWCs should be adopted throughout the city (8.2% agreement) or that BWCs should be expanded to other departments nationwide (10.5%), whereas Tempe was extremely supportive of BWC expansion (66.4% and 71.5%, respectively).

Figures 1–3 show within-department changes in officer perceptions from pre- to postdeployment of BWCs. Figure 1 shows the change in attitudes among Phoenix officers, and the overall trend is increasingly negative perceptions regarding the technology. Fewer officers agreed that BWCs have evidentiary value, as there were significant declines in agreement that BWCs provide more accurate accounts of incidents (20.4%), improve the quality of evidence (13.9%), and make it easier to prosecute domestic violence offenders (13.5%). Likewise, even fewer Phoenix officers agreed that BWCs had positive effects on citizen

Table 3. Post-Deployment Perceptions in Each Site (Percentage Agree or Strongly Agree).

Post-BWC deployment		Phoenix	Spokane	Tempe
Category	Question			
Completing incident reports	Officers spend less time completing paperwork	5.9	15.6	28.5
	More accurate accounts of incidents	57.1	72.8	87.3
	Improve quality of evidence	52.4	72.8	91.8
	Makes officers' job easier	5.9	34.0	53.8
Use of evidence in court	Easier to work with the prosecutor's office when submitting evidence	17.9	36.9	55.7
	Easier to prosecute DV offenders	33.4	56.3	63.9
	Help prosecute DV cases when victim is unwilling to testify	39.7	67.0	71.5
Citizen reaction	Citizens will be more cooperative	26.2	35.0	57.0
	Citizens will be more respectful	19.1	30.1	50.6
	Suspects less likely to resist arrest	13.0	20.4	28.5
	People will be generally less aggressive	22.6	28.2	43.0
	Cameras hurt 'police-community' relations	41.7	19.4	10.1
	Cameras will increase citizen complaints against officers	15.6	21.4	8.2
Police officer behavior	Officers will be less likely to give warnings	36.4	20.4	22.8
	Officers will have fewer contacts with citizens	68.2	31.1	22.8
	Officers will feel like they have less discretion	82.4	50.5	56.3
	Officers will be more cautious in making decisions	75.0	47.6	72.2
	Officers will act more professional	45.9	37.9	68.4
	Affects an officer's decision to use force	64.7	42.7	49.3

(continued)

Table 3. (continued)

Post-BWC deployment		Phoenix	Spokane	Tempe
Category	Question			
Familiarity, comfort, and ease of use	Easy to locate and retrieve video for a specific event	23.1	48.5	74.6
	Equipment is easy to use	53.8	54.4	63.9
	Equipment is comfortable to wear	50.1	46.6	62.6
	Battery life of the camera is adequate	51.3	40.8	61.3
	Easy to download data at the end of shift	15.2	58.3	74.7
General perceptions	Body cameras are well received by coworkers	5.8	35.9	69.0
	Police benefit more from body cameras than citizens	24.7	66.0	70.3
	Wearing a body camera improves officers' job satisfaction	2.4	21.4	25.3
	Cameras improve officer training	31.4	50.5	77.8
	Cameras improve overall job performance	11.7	28.2	40.5
Overall perceptions	Cameras tend to increase officer safety	9.3	25.2	19.6
	Cameras should be expanded to other departments	10.5	54.4	71.5
	Cameras should be adopted throughout the city	8.2	57.3	66.4
	Advantages of body cameras outweigh the disadvantages	14.0	55.3	80.4

Note. BWC = body-worn camera; DV = domestic violence.



Figure 1. Change in perceptions between Waves 4 and 5 in Phoenix (AZ).

***p ≤ .01. **p ≤ .05. *p ≤ .10.

behavior, with additional declines in agreement that BWCs will make citizens more cooperative (15.1%), more respectful (16.4%), and less aggressive (12.5%). More officers also believed that BWCs hurt police–community relations (8.8% increase in agreement). The one area that perceptions improved in Phoenix was ease of use and comfort of BWCs, where more officers agreed that BWCs are



Figure 2. Change in perceptions between Waves 1 and 2 in Spokane (WA).

*** $p \leq .01$. ** $p \leq .05$. * $p \leq .10$.

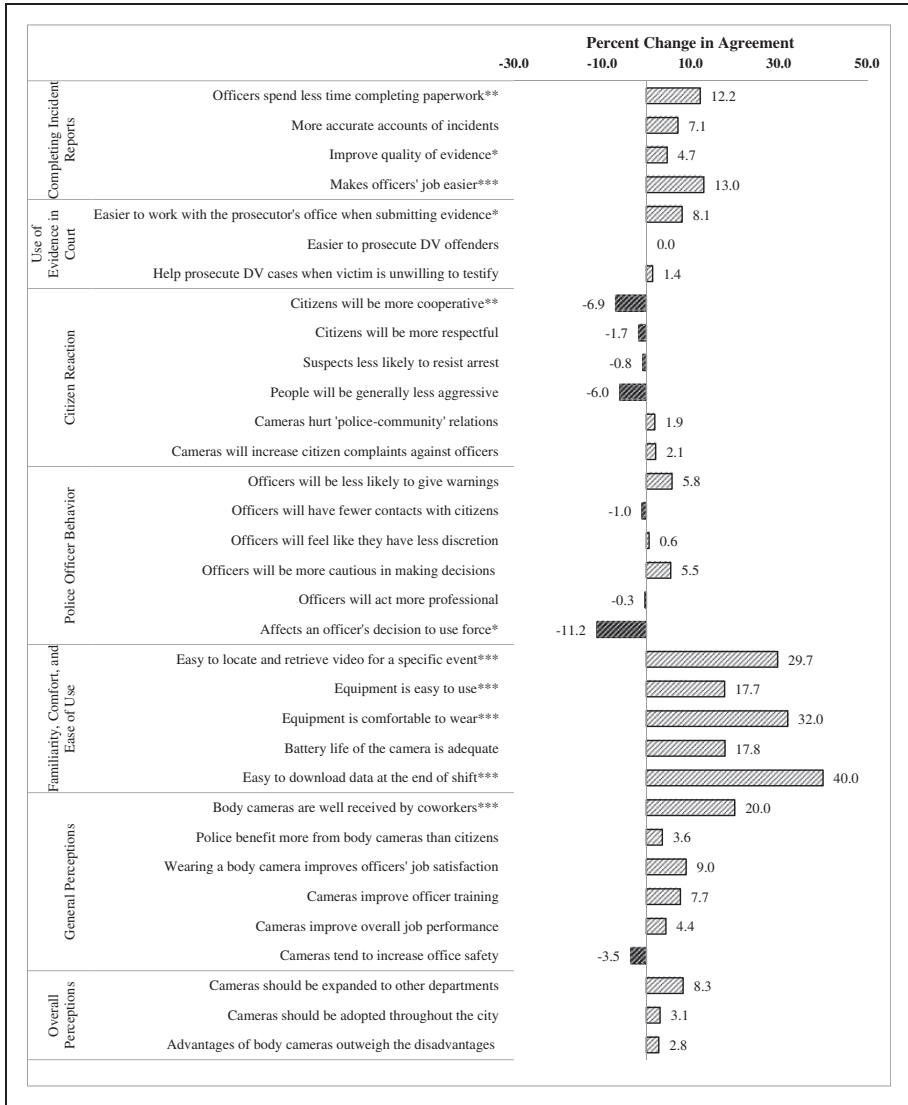


Figure 3. Change in perceptions between Waves 2 and 3 in Tempe (AZ).

*** $p < .01$. ** $p < .05$. * $p < .10$.

easy to use (26.3%), are comfortable to wear (28.4%), and that the battery life is adequate (24.4%).

Figure 2 shows the changes in perceptions of Spokane officers, where perceptions improved generally with the exception of a few areas. For example, officers increasingly agreed that it was easy to download footage at the end of a shift. Likewise, the perception that BWCs are well received by coworkers increased nearly 16% and the belief that the department should adopt BWCs throughout the city increased 18%. Spokane officers also became more skeptical of the purported positive effects of BWCs in key areas. For example, agreement that BWCs assist in domestic violence cases when victims refuse to testify declined by 11.6%. Perceptions of the effects of BWCs on citizen and officer behavior also suffered, as agreement that citizens were more cooperative declined by 11.4% and agreement that officers would act more professionally with BWCs declined by 10.7%.

Figure 3 shows the change over time among Tempe officers, and the general theme reflects increased officer attitudes regarding the positive impact of BWCs in several areas. Significantly, more officers agreed that BWCs reduced paperwork and made officers' jobs easier (12.2% and 13%, respectively). Vendor selection and camera deployment seemed to alleviate a number of concerns regarding the comfort and ease of use of BWCs as well; significantly, more officers agreed that it was easy to locate and retrieve specific footage, the camera was easy to use and comfortable to wear, and that it was easy to download the footage at the end of a shift (29.7%, 17.7%, 32%, and 40% increases, respectively). Tempe officers also reported that their coworkers increasingly accept BWCs (20% increase in agreement), though like Phoenix and Spokane officers, they expressed concern about the impact of the technology on citizen behavior (6.9% decline in agreement that citizens will be more cooperative).

Discussion and Conclusion

This study investigated three questions regarding variation in officer perceptions of BWCs across departments' pre- and postdeployment and within departments over time. There is significant variation across departments' predeployment. Comparatively, Phoenix officers have negative perceptions of BWCs, Tempe officers have largely positive perceptions, and Spokane officers' perceptions generally lie somewhere in between. This trend continues postdeployment. Within the agencies, all three departments experienced change over time with several common themes. Each of the departments' officers reported improved perceptions of the ease of use and comfort of BWCs, but they became more skeptical about the impact on citizens. Tempe and Spokane officers, overall, increasingly recognized the positive effects of BWCs, whereas Phoenix did not see this trend.

There are multiple explanations for the findings of this study. First, the timing of the two experiments may indicate a temporal effect. Phoenix officers (surveyed

in 2013) had predominantly less favorable perceptions of BWCs than did the officers in Spokane and Tempe (surveyed in 2015) predeployment and had significant reductions in favorability postdeployment. In 2013, BWCs were still an emerging technology, with a paucity of informed knowledge about their impact in policing, and deployed in relatively few departments; by 2015, BWCs were much more common. Controversial officer-involved shootings in 2014, the social outcry resulting from them, and the call for BWC expansion, led to President Obama's commitment to grant funding for the purchase of BWCs and also facilitated an increase in the number of research projects to understand the technology's effect on policing (Lum et al., 2015). Combined, these factors created greater acceptance regarding adoption of the technology. Thus, Tempe and Spokane officers were operating in a social context in which cameras had become the new reality (see Klinger, 2003; Wejnert, 2002). Bolstering the diffusion of innovation explanation is the political climate surrounding BWCs. Though there were certainly general political conditions favorable to BWCs in late 2014 and early 2015, Spokane and Tempe experienced very different local political conditions. The Tempe Police Department opted to implement a BWC program as a proactive step to demonstrate transparency, whereas the Spokane Police Department implemented BWCs upon recommendation of the city's Use of Force Commission (2013), which had suggested implementing BWCs as 1 of the 26 recommendations for reorganizing and restructuring the department's use of force policies and procedures. This commission was formed after unconstitutional use of force was used to subdue Spokane resident Otto Zehm in 2006, resulting in his death a few days later (City of Spokane Use of Force Commission, 2013). The medical examiner ruled his death a homicide and in 2011, Spokane Police Officer Karl Thompson was convicted in federal court of one count of violating Mr. Zehm's civil rights and one count of obstruction of justice and was sentenced to nearly 5 years in federal prison. Given the circumstances for the formation of the commission, and the fact that BWCs were a result of this commission's recommendations, it is unsurprising that the Spokane Police Department rank-and-file have less positive perceptions of the technology overall.

This temporal effect is also salient for the differences in officers' perceptions regarding the evidentiary value of BWCs. Though officers from all three departments viewed BWCs as having evidentiary utility, the perceptions among Phoenix officers were decidedly less positive, especially regarding collaboration with the prosecutor's office. This is likely due to the fact that in 2012 and 2013, Phoenix was one of the only cities in the Phoenix metropolitan area to have BWCs and only one precinct within the police department deployed cameras. City and county prosecutors were unaccustomed to handling BWC footage, and with so few cameras in play, they had little incentive to put a plan in place for accepting BWC footage as evidence, making it available for discovery, and making use of it in court. By 2015, court systems had begun to create processes

to address these issues as BWCs become more popular. In Tempe, for example, the county (Maricopa, the same county where Phoenix is located) and city prosecutors have created Evidence.com accounts in order to be partner agencies with the police department and to allow for more seamless sharing of evidence. The same partnership plan between the police department and courts was not put into place in Spokane, so only time will tell whether officers will continue to have positive perceptions of the effects of BWCs on downstream criminal justice actors. More research on the effects of BWCs on courtroom actors is needed, both quantitative (e.g., court outcomes such as charging decisions, plea bargains, and sentencing decisions) and qualitative (e.g., prosecutor and defense strategies, judicial decision making, and effects on jurors; Lum et al., 2015).

Second, the consistently more positive perceptions of Tempe officers can also be explained by their 18-month planning and implementation process. In particular, the policy development process included a variety of stakeholders, including line officers. Officer input was considered when developing the policy for when to turn on cameras, the use of footage by supervisors, and whether officers could view footage before writing reports. Members of the steering committee included representatives from the police union, professional standards, patrol, criminal investigations, information technology, budget and finance, and crime analysis. Sworn members of this committee were present at every BWC training when officers received their cameras and made themselves available on- and off-duty for officers to ask questions as they became comfortable with cameras. This deliberate approach likely made the acceptance of cameras much smoother for line officers.

Third, the changes in perceptions over time make sense for a number of reasons. Increased familiarity leads to fewer unknowns. Predeployment, officers likely relied on gossip, second- or third-hand information from officers in other departments, or what they had read in the news to inform their beliefs about the benefits and drawbacks of BWCs. As more departments deployed BWCs, and as information was disseminated both vertically (from command staff) and horizontally (among the ranks) within their own departments, officers benefitted from diffusion of the innovation (Ryan & Gross, 1943; Valente & Rogers, 1995). Similar patterns are seen in the adoption of other policing practices and technologies, such as SWAT teams (Klinger, 2003) and the TASER (White, 2014b). Officers also gain a better understanding of how BWCs operate and their range of capabilities. Anecdotally, multiple officers expressed a change of heart regarding BWCs after the first incident where BWC footage immediately cleared them of wrongdoing in response to a complaint (Braga et al., 2015; Katz et al., 2015). Many felt that, in the post-Ferguson political climate, officers are especially vulnerable to accusations of misconduct and the body cameras provided protection from false accusations. Officers also described innovative uses of BWCs, including using them as “viewfinders” to see around corners or into blind spaces like attics. Training units use them in tactical scenarios and field

training officers can replay footage of an encounter to a trainee and “Monday morning quarterback” the encounter frame by frame (White, 2014a).

Finally, the skepticism regarding the impact of BWCs on citizen behavior is logical. None of the cities included in this study have a mandatory notification policy, meaning that it was generally left to officers’ discretion whether citizens were notified that their encounter was being recorded. Anecdotally, officers in all three cities observed that the citizens with whom they most frequently interact are often not in a rational frame of mind (e.g., they are drunk, high, angry, traumatized, etc.). The combination of these two factors—knowledge of the camera and citizen rationality—serves as important preconditions for the camera to have positive effects on citizen behavior (e.g., a civilizing effect). Supporting this contention, a recent study of Spokane residents who had encounters with BWC-wearing officers found that only 28.5% knew about the camera (White, Todak, & Gaub, 2016). Of those who knew about the camera, only 10.1% said it affected what they said or how they acted. Thus, it is likely that mandatory notification policies are rendered ineffective if preconditions for a *civilizing effect* are not met.

Moving forward, there are a number of practical implications and future directions for research. Internal buy-in within a department is essential for successful implementation of a BWC program. This is primarily achieved through a deliberate and transparent planning process, which is described in the five steps outlined in the Bureau of Justice Assistance (2015) Body-Worn Camera Toolkit Law Enforcement Implementation Checklist: (a) learn the fundamentals, (b) develop a plan, (c) form working groups and identify collaboration opportunities, (d) define policies and key protocols, and (e) define technology solution. These steps encourage departments to identify their agency’s needs and seek a technology solution that meets those needs, develop a comprehensive policy, and collaborate with relevant internal and external stakeholders. In so doing, departments are able to create a BWC program that achieves the agency’s goals and balances the concerns of both officers and the public to bolster trust and transparency. It is likely that departments that include multiple stakeholders—including rank-and-file officers—in policy development and program implementation will see increased officer buy-in for the desired program as well as increased compliance with the required procedures (Sklansky & Marks, 2008). That said, even the best laid plans can be made obsolete if departments do not continually assess officer perceptions and adjust policies or procedures as needed to address officer concerns. This is especially true of rapidly evolving technology like BWCs. Future research should evaluate not only policy development but also the overall approach to the implementation of the BWC program to determine best practices for integrating this new technology into existing systems and workflow (Lum et al., 2015).

Researchers also need to keep pace with the evolution of BWCs and the questions raised by their use. For example, in a recent analysis of existing studies

and ongoing research projects on BWCs, Lum et al. (2015) identified several research questions that have received little or no attention. These include officer compliance with the Fourth Amendment, bias and differential treatment by police, citizen compliance with officer commands (such as in crowds, protests, or demonstrations), the use of BWCs in training protocols, and police supervision and managerial systems. State or department variations in policy, legislation, and technical capabilities (e.g., storage and use of footage) should also be explored.

It is important to remember, though, that BWCs are not a silver bullet. They will not end police brutality or misconduct; rather, they are one more tool that officers can use to efficiently and effectively do their jobs. This study begins to unpack the differences in police officer perceptions of BWCs across both time and place in an effort to better understand the role of BWCs in the police profession. As researchers focus on officers' beliefs—both positive and negative—about BWCs, police departments can use that knowledge to improve their performance, thereby bringing greater legitimacy and enhancing public trust.

Appendix

Police Officer Body Camera Perceptions Survey Questions

Response options for each question are: Strongly agree, agree, disagree, and strongly disagree.

Completing Incident Reports: When officers wear body cameras. . .

1. They will spend less time filling out forms and other types of paperwork.
2. They will have a more accurate account of what has transpired.
3. It improves the quality of evidence they can submit.
4. It makes their job easier.

Use of Evidence in Court

5. When wearing the body camera I know that the prosecutor's office will be easy to work with when submitting video evidence.
6. Body cameras make it easier to prosecute domestic violence offenders.
7. Evidence gathered from a body camera helps prosecute cases involving domestic violence when the victim is unwilling to testify.

Citizen/Resident Reactions

8. Citizens will be more cooperative once they become aware that an officer is wearing a body camera.

9. Citizens will be more respectful once they become aware that an officer is wearing a body camera.
10. Suspects are less likely to resist arrest when they become aware that the officer is wearing a body camera.
11. Generally, people become less aggressive when they are aware that a body camera is being used.
12. Having officers wear body cameras will hurt police-community relations.
13. The use of body cameras increases the number of citizen complaints against officers.

Police Officer Behavior: When wearing a body camera, an officer...

14. Is less likely to give warnings to citizens.
15. Will have fewer contacts with citizens.
16. Will feel like they have less discretion.
17. Will be more cautious in making decisions.
18. When wearing a body camera an officer will act more professional.
19. Wearing a body camera affects an officer's decision to use force.

Familiarity, Comfort, and Ease of Use

20. When an officer wears a body camera it is easy to locate and retrieve video for a specific incident if needed.
21. When an officer wears a body camera, the equipment is easy to use.
22. The body camera equipment is comfortable to wear.
23. The battery life of the body camera is adequate.
24. When an officer wears a body camera, it is easy to download data at the end of a shift.

General Perceptions

25. The use of body camera equipment is well received by coworkers.
26. The police benefit more from body cameras than citizens do.
27. When an officer wears a body camera it improves their job satisfaction.
28. Body cameras improve officer training.
29. Body cameras improve the overall job performance of an officer.
30. Body cameras tend to increase officer safety.

Overall Recommendations

31. I think that the use of body cameras should be expanded to other departments.

32. I think that the [City] Police Department should adopt body cameras throughout the city.
33. The advantages of police departments adopting body cameras outweigh the disadvantages.

Authors' Notes

The opinions expressed here are those of the authors and do not necessarily reflect the positions of the LJAF and BJA.

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Notes

1. It is unclear whether these findings are due to officers behaving better, citizens behaving better, or both (White, 2014a).
2. Findings from the Phoenix Police Department were part of a larger study funded by the Bureau of Justice Assistance Smart Policing Initiative. Findings from the Spokane and Tempe Police Departments were part of a larger study funded by the Laura and John Arnold Foundation.
3. The randomized controlled trial occurred in two phases. The first phase was a 6-month period during which treatment officers were assigned to wear BWCs and control officers were assigned not to wear them. During the second 6-month phase, control officers also received BWCs. The survey administrations used in these analyses were conducted during the first phase.
4. Areas 81 and 82 are statistically similar in geographic size, percentage of black and Hispanic, population, and land use. The areas selected for the study were known in advance of shift bid, but many officers noted that the presence of the BWCs was often less important than shift time, proximity to home, and other considerations officers use in bidding for a shift. See Katz et al. (2015) for a more detailed discussion of the Phoenix study methodology.
5. As the most conservative estimate possible, percentages are calculated using the total number of survey respondents, rather than the number of respondents for each question.
6. The number of completed surveys is significantly higher in the predeployment administration because the department leadership required all officers to attend roll call

briefings, including officers assigned to specialty units. During the postdeployment administration, officers from specialty units were not required to attend the roll call briefings. Authors attempted to capture perceptions of those officers after the fact and their efforts achieved limited success.

7. Response rates were calculated as the number of officers who completed a survey out of the total number of officers enrolled in the study.

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