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Police, public, and offender perceptions of body-worn video: a single jurisdictional
multiple-perspective analysis

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Running Head: Police, public, and offender perceptions of BWV

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Abstract

Objectives. Police, public, and offender survey responses from a single jurisdiction give a multiple-perspective insight into the use of body-worn video (BWV) cameras by police.

Methods. Police attitudinal data was collected from before ($n = 190$), during ($n = 139$), and at the conclusion ($n = 221$) of a BWV implementation trial. Public attitudes were collected at the conclusion of the BWV implementation trial via online survey ($n = 995$ respondents) and intercept survey ($n = 428$ respondents). Offender attitudes ($n = 302$) were collected in police custody over a 6-month period immediately preceding the BWV trial.

Results. The extent to which police felt BWV influenced their behavior tempered during the trial. All three perspectives were supportive of the use of BWV. The public who had encountered BWV-wearing officers and the offender sample indicated limited belief that BWV would reduce bad behavior. There was also clear contention about the policy and practice decisions around recording.

Conclusions. These findings have significance for BWV trials, commenting on the importance of (a) collecting police attitudes at multiple points, (b) separating the attitudes of public who did encounter police wearing BWV, and (c) data collection and policy for evaluation outcomes.

Keywords

Body-worn video cameras; police surveys; public surveys; offender surveys.

Introduction

This paper summarizes findings from police officer, public, and offender surveys focused on attitudes towards police use of body-worn video (BWV). These multiple-perspectives were generated within a single jurisdiction and contributed to a randomized controlled trial of BWV by the Western Australia Police Force (WAPOL). The aim of this paper is to add to the general body of literature critiquing attitudes towards the use of BWV technology in a policing context. The novel contributions of this paper are to add to the limited research (a) assessing officer perceptions of BWV at multiple points through implementation, (b) analyzing the impact of actual police-public interactions in the presence of cameras (as opposed to hypothetical opinions about the technology), (c) utilizing multiple survey methodologies within a single design, highlighting the importance of methodological decisions for evaluation findings, and (d) including the offenders' perspectives on this emerging technology. The analysis explores attitudes towards BWV as a source of evidence, the impact it has on community relations and police/public behavior, the complexity around consent and recording practices, and the relationship between BWV and complaints against police. The outcome of these Australian-based surveys indicate overall support of this technology, but also highlight some important procedural issues about recording and caution against expecting BWV to produce a 'civilizing effect' for public behavior (White, Todak, & Gaub, 2017). The findings are discussed with respect to previous similar research and the broader implications for BWV technology in a policing context. The remainder of the introduction briefly summarizes what is known about the BWV cameras in policing and outlines the research focus for the current study.

The inconsistent relationship between BWV cameras and behavior

There has been substantial recent effort to undertake randomized controlled trials (RCTs) of the implementation of BWV in a policing context (Ariel, Farrar, & Sutherland, 2015; Ariel et al., 2016; Braga, Coldren, Sousa, Rodriguez, & Alper, 2017; Braga, Sousa,

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Coldren, & Rodriguez, 2018; Drover & Ariel, 2015; Henstock & Ariel, 2017; Owens & Finn, 2018; Peterson, Yu, La Vigne, & Lawrence, 2018; Wallace, White, Gaub, & Todak, 2018; White, Gaub, & Todak, 2018; Yokum, Ravishankar, & Coppock, 2017). In addition to this, Piza (2018) and Lum et al. (2015) have undertaken comprehensive literature reviews to identify the policy implications and knowledge gaps associated with police use of BWV. Despite the replication of some pattern across studies, there is substantial inconsistency in the relationship between BWV and the behavior of police and members of the public.

There is good reason to assume that BWV should cause people to behave differently, assuming they are aware the technology is present, with this change in behavior driven by the awareness they are being watched (the "Hawthorne effect"; supported by a large body of research across a range of contexts: for a systematic review see McCambridge, Witton, & Elbourne, 2014). At this stage it is not clear the extent to which the Hawthorne effect can explain behavior when BWV is present. From a police perspective, evidence that the cameras improve behavior does exist with respect to reduced complaints against police (Ariel, 2016b; Ariel et al., 2015; Ariel, Sutherland, Henstock, Young, & Sosinski, 2017; Braga et al., 2017; Ellis, Jenkins, & Smith, 2015; Peterson et al., 2018; White, Gaub, et al., 2018) and reduced (presumably unjustified) police use-of-force (Ariel et al., 2015; Braga et al., 2017; Braga et al., 2018; Henstock & Ariel, 2017; Jennings, Fridell, Lynch, Jetelina, & Reingle Gonzalez, 2017; White, Gaub, et al., 2018). However, BWV has also been found to have a negligible impact on police use-of-force (Ariel, 2016b; Ariel et al., 2016; Headley, Guerette, & Shariati, 2017; Peterson et al., 2018; Yokum et al., 2017) and civilian complaints (Ariel et al., 2017; Yokum et al., 2017). Additional inconsistency is added by studies that demonstrate an opposite to the Hawthorne effect, producing increases in assaults against BWV wearing officers (termed a 'backfire effect', Ariel et al., 2016, 2018) and findings that short-term positive effects of BWV on decreasing police complaints dissipate over time (White, Gaub, et al., 2018).

At least part of this inconsistency could be due to the influence of BWV on police discretion (Rowe, Pearson, & Turner, 2018). Some studies have demonstrated BWV

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wearing officers show an increase in sanction rates (Braga et al., 2017; Headley et al., 2017; Hedberg, Katz, & Choate, 2016; McClure et al., 2017; Yokum et al., 2017), self-initiated calls (Wallace et al., 2018), and recording certain types of police events (Ellis et al., 2015; Jameel & Bunn, 2015; Owens, Mann, & Mckenna, 2014). In contrast, arrests have been found to significantly reduce when officers wear BWV (Ariel, 2016b; Hedberg et al., 2016; McClure et al., 2017) and BWV wearing officers have been demonstrated to be less likely to conduct subject stops (Peterson et al., 2018). In effort to explain these inconsistent results, Arial et al. (2018) propose the ‘deterrence spectrum’, suggesting that choice on when to use BWV influences the likelihood of officers being able to utilize police discretion.

The importance of implementation context and methodology

In addition to the influence of police discretion in camera use, there are also a large number of variations in implementation methodology across BWV trials published to date. There is wide diversity in how cameras are being utilized by police, with variation in: (a) the public availability of camera-use policy, (b) how personal privacy is addressed, (c) officers’ capacity to review footage without submitting a formal pre-report, (d) policy around retention of recorded footage, (e) in-place protections to prevent tampering/misuse of footage, (f) access to footage for individuals seeking to make complaints about police, and (g) limitations on the use of biometric technologies (e.g., facial recognition) to search footage (see Police Body Worn Cameras Policy Scorecard: www.bwcscorercard.org). Research design decisions will also be influencing evaluation outcomes. Factors such as sample sizes, duration of interventions, data collection methodologies (e.g., phone-based interviews vs. online surveys, voluntary vs. ordered participation, single vs. multiple survey collection points over time), and randomization process vary widely across studies. There are also important contextual variations across studies that influence scope for BWV to benefits/impact problems (i.e., starting levels for assaults on/by police, public confidence in police, and complaints against police). Knowing about contextual definitional rules and specific starting values for these metrics would expose ceiling effects, floor effects, and hidden influences on

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counting rules that might be adding to the currently cloudy evidence base. Information about these contextual, implementation, and evaluation factors may help explain inconsistencies discussed, above.

How Do People Feel About BWV?

Further to the mixed BWV evaluation findings relating to behavioral changes, there is also a diversity with respect to police and public attitudes towards BWV camera technology. From the police perspective, officers have indicated they think BWV footage could potentially protect against unfair complaints (Ellis et al., 2015; Fallik, Deuchar, & Crichlow, 2018; Pelfrey Jr. & Keener, 2016; Sandhu, 2017), but potential negative implications of the technology have also been identified from surveys of police with suggestion that BWV footage could be used to unfairly retrospectively scrutinize officer decision-making (Owens et al., 2014). Surveys of officers have also raised concerns about suspect privacy (Pelfrey Jr. & Keener, 2016) and the policies around right to review footage and the compulsory nature of recording (Gramagila & Phillips, 2017).

Demonstrating the significance of evaluation methodology, Pelfrey Jr. and Keener (2018) conducted a pre- and post-implementation survey of officers to address attitudinal changes towards BWV, finding that many of the pre-implementation fears officers had raised were not realized. Similarly, in one of the few multiple perspective analysis of BWV (including feedback from police, public, and key stakeholders), White, Todak, and Gaub (2018) collected police attitudinal data at multiple points during the implementation phase and overall found high levels of acceptance towards BWV technology. White et al. also demonstrated increasing skepticism from police across the trial that BWV would improve citizen behavior: what they termed a 'civilizing effect'. Other surveys have also demonstrated a lack of confidence that BWV produces a 'civilizing effect' that results in a reduction in assaults of police (Ellis et al., 2015; Headley et al., 2017; White et al., 2017) or resisting arrest (2016). Owens and Finn (2018) proposed this inconsistent influence of the technology

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is likely explained by the moderating influence intoxication and familiarity with the criminal justice system would have on ‘potential’ offenders’ decision-making.

From a public perspective, attitudes to police BWV seems supportive (Ariel, 2016a; Crow, Snyder, Crichlow, & Ortiz Smykla, 2017; Ellis et al., 2015; Sousa, Miethe, & Sakiyama, 2018; White, Gaub, et al., 2018; White et al., 2017; White, Todak, et al., 2018). Public surveys have also demonstrated an indirect benefit of the use of BWV stemming from perceived enhancements in procedural justice during the police encounter and attributed to the increased oversight of officer interactions as a result of wearing cameras (Demir, Apel, Braga, Brunson, & Ariel, 2018; McClure et al., 2017). However, there are also some inconsistencies in the public attitudes towards cameras, with Ariel (2016a) finding the willingness to report is influenced by background crime rates in the areas that cameras were trialed and Sousa et al. (2018) discovering varied opinions on the capacity for cameras to influence transparency, improve public trust in police, and enhance police-community relationships.

An important further finding from White et al. (2017) demonstrates that the public are not always aware they have encountered an officer wearing BWV. As a result of a phone-based survey examination of perceptions for people who actually encountered BWV, White et al. discovered that only just over one-quarter of respondents realized they had encountered BWV (with similar results found by McClure et al., 2017). This result enabled the researchers to produce a ‘non-BWV’ proxy condition for comparison purposes. No statistically significant differences emerged between this group and the BWV-aware group, demonstrating overall positive attitudes to BWV and a lack of belief that BWV would result in a ‘civilizing effect’ with respect to public behavior. The lack of universal awareness of the technology is important to consider, however, if the mechanism by which the cameras are intended to change behavior is connected to the Hawthorne effect.

Research Aims

The intent of this paper is to provide a multiple-perspective analysis of perceptions relating to the use and utility of BWV on shaping the behavior of police and members of the public. As is explained, below, the three separate perspectives (police, public, and offenders) analyzed here were not collected in a single, coordinated manner. The police and public data was collected as part of a broader trial of BWV, and the offender data was collected as part of separate national exercise. The questions that were asked were informed by best-practice evidence at the time. In triangulating these results, the three major research aims are to: (a) examine police attitudes to BWV, including how these attitudes are altered as a consequence of participating in a BWV trial, (b) quantify public attitudes to BWV, including how these attitudes are altered as a consequence of actual (as opposed to hypothetical) involvement with police wearing BWV, and (c) quantify offenders' attitudes to BWV. Drawing on the main themes that have emerged from the previous research in this area, these issues will be analyzed with particular focus on the influence of BWV on evidence/investigations, community relations, recording decisions, influence on police/public behavior, and complaints against police.

Methodology

Police Survey

Data Source. Over a six month period from April 2016 WAPOL used a randomized controlled trial to explore the potential utility of BWV cameras. During the trial, each day was randomly designated as a 'treatment' day, on which all participating officers commencing a shift wore and used BWV, or a 'control' day, during which no officers wore BWV (see Clare, Henstock, McComb, Newland, & Barnes, under review, for a full summary of the RCT results in this case). To add additional information to the BWV trial, WAPOL members who were involved in the RCT were surveyed with questionnaires containing a mixture of closed and open-ended questions on BWV including: (a) BWV utility in capturing evidence, (b) BWV

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impact on community relations, (c) decisions about when to record using BWV, (d) perceived influence of BWV the behavior of the public, (e) perceived influence of BWV on the behavior of police, and (f) BWV as a source of evidence when addressing complaints against police.

Sample. The BWV RCT involved 498 WAPOL officers: 80% male, average age 36 years, and average 8.3 years' service (Probationary Constables, 5%, Constables, 28%, 1st Class Constables, 25%, Senior Constables, 23%, and officers ranked Sergeant and above, 16%). Officers were surveyed on three occasions: before the trial commenced (Time 1, 347 survey invitations issued, resulting in a 54.7% response rate), mid-way through the trial (Time 2, 414 survey invitations and a 33.6% response rate), and at the closure of the trial (Time 3, 495 survey invitations issued and a 44.6% response rate).

Public Online Survey

Data Source. During the concluding stages of the WAPOL BWV RCT (December 2016) an online survey of members of the public was undertaken to ask about their attitudes towards BWV technology being used by the local police. The survey was promoted to the general public via WAPOL social media (Facebook and Twitter), the WAPOL web site, as well as through some targeted email invitations to residents/business owners from one of the locations where BWV had been worn intensively by officers during the trial. The questionnaire contained a mixture of closed and open-ended questions on BWV including: (a) exposure to BWV, (b) expected (and, where relevant, actual) influences of BWV on police-public interactions, (c) the influence of BWV on police behavior, (d) decisions about when to record using BWV, and (e) general attitudes towards WAPOL.

Sample. A total of 995 responses were received. The modal age category of the respondents to the online survey was 45 to 54 years of age and 51.1% were male. These were not stratified surveys and the results were not intended to be representative of the WA population. The sampling process meant that the main sources of potential bias within these data sets were (a) 'self-selection' bias, where only persons with a pre-existing interest (and hence already strong views) were likely to participate, and (b) location bias, with the majority

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of respondents drawn from the same geographic area. This geographic focus on an area dominated by the night-time economy and retail custom was deliberate to increase the likelihood that respondents would have interacted with the BWV trial.

Public Intercept Survey

Data Source. Concomitant to the public online survey, an intercept survey of members of the public was undertaken at a range of locations where BWV had been worn intensively by officers during the trial. Data was collected during the early evening and into the night on a Thursday, Friday, and Saturday. The questionnaire was a short-form of the online survey and covered equivalent issues.

Sample. A total of 428 responses were collected and the same data caveats apply. The modal age category of the respondents to the public intercept survey was 25 to 34 years of age and 55.4% were male.

Offender Survey

Data Source. This survey data involved re-analysis of data collected by Lee, Taylor, Willis, and Gannoni (e.g., Gannoni, Willis, Taylor, & Lee, 2017; Lee, Taylor, & Willis, 2018; Taylor, Lee, Willis, & Gannoni, 2017), which was obtained using addendum questions to the Drug Use Monitoring in Australia (DUMA) program survey designed to examine police detainees' perspectives of the use of police BWV. The DUMA program was established in 1999 and is a quarterly collection of criminal justice and drug-use information from police detainees at multiple sites (police stations or watch-houses) across Australia. Interviews are conducted quarterly with detainees who have been arrested in the previous 48 hours and are being held in custody in participating sites. All police detainees held in custody during periods of data collection are eligible to participate, unless they are too intoxicated, mentally unfit, potentially violent or aggressive, require an interpreter, or deemed ineligible by the police custody manager. Participation is voluntary and confidential. The DUMA self-report interview is independent of police and administered by trained social researchers. The addendum contained a mixture of closed and open-ended questions on (a) awareness of

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police BWV deployment, (b) experience of police BWV at point of arrest, and (c) perceptions of the impact of police BWV on police behavior and citizen behavior.

Sample. Data was collected between July and November, 2015, which meant this data predated the commencement of the BWV RCT by about 6 months. Nationally, a total of 907 detainees answered questions from the addendum questionnaire, and 302 ($n = 33.3\%$) were from Western Australia (WA). This subset forms the basis for the DUMA analysis presented in this paper. On average the detainees in WA were 32.5 years of age ($SD = 10.4$ years, $min = 17$ years, $max = 79$ years), 26.5% of respondents identified as Aboriginal or Torres Strait Islander (ATSI), and 78.8% were male.

Results

This analysis only focuses on the closed-answer responses provided by participants across the three surveys. The three data sets are analyzed in turn and relevant comparisons between surveys discussed.

Police Attitudes to BWV

The officer survey data set contained the largest bank of questions. As a result, it was possible to gain insight into police attitudes about BWV and evidence/investigations, community relations, recording decisions, public behavior, police behavior, and complaints against police. Mirroring the approach used by White et al. (2018), Table 1 displays the extent to which officers agreed (strongly agree and agree responses, combined) to a series of questions relating to each of these topics. Table 1 also shows how these attitudes were shaped by the officers' interactions with the technology over the course of the RCT and, where available for comparison, highlights significant changes in attitudes between Time 1 and Time 3.

Insert Table 1 approximately here

There are some significant points to note from analysis of the data in Table 1, with respect to both attitudes that changed and also those that stayed the same across the RCT.

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First, with respect to evidence and investigations, there was consistent support for the role that BWV played in improving evidence gathering (weighted average 80.7% strongly agree/agree, termed 'agree' from now on) and indication officers felt that recording interviews in the field was more efficient than traditional alternatives (weighted average 60.2% agree). However, there was also signs involvement with the trial significantly reduced officer's confidence in the potential for BWV to influence offenders' guilty plea decisions (declining by 12 percentage points from 54% at Time 1 to 42% at Time 3) and that reviewing BWV footage built confidence when preparing to give evidence in court (down 15 percentage points from 64% at Time 1). From a community relations perspective, the trial participation allayed concerns about the potential for BWV to make the public less inclined to approach officers (with only 13% of officers agreeing with this position at Time 3) and also gave indication that the cameras would make officers more accountable to the public (50% agree at Time 3).

The overall trends in attitudes about BWV recording decisions were aligned with the main findings from previous studies, discussed above. Throughout the trial officers were almost completely opposed to the idea that every public interaction should be recorded (weighted average 7.1% agree). Furthermore, responses at Time 3 gave insight into officers' attitudes to recording generally, simultaneously demonstrating (a) strong support for the positions that they should be able to record without permission (70% agree), (b) mixed support for the idea that they should try to inform the public when they are being recorded (47% agree), and (c) very little support for the idea that the public should be universally allowed to record on-duty police (17% agree).

When considering the influence of BWV on public behavior, positive changes through the trial demonstrated significant declines in the concern that the cameras make people angry (25 percentage point reduction from 36% agree at Time 1) and significant increases in the perception that BWV could help defuse aggressive situations (17 percentage point increase from 14% agree at Time 1). However, consistent with the previous research findings in this area, officers did not generally indicate the cameras increased their safety

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(weighted average 34.4% agree) and there was very little support for the position that BWV would reduce the likelihood of offenders resisting arrest (11.1% weighted average across Time 2 and 3).

The officers' perceptions of the influence of BWV on police behavior also produced results that are consistent with previous research findings. Although 22.5% (weighted average) of officers consistently felt the cameras made it less likely they could give warnings instead of formal sanctions, the perception that BWV reduced officer discretion did significantly decline through the RCT (down 11 percentage points from 44% agree at Time 1). Likewise, changes over the trial demonstrated a declining belief that BWV influenced officer use-of-force (down 21 percentage points from 33% agree that BWV would make officers less likely to use force at Time 1) and an increased perception that BWV did not alter how officers spoke to people (42 percentage point increase from 21% agree at Time 1). As has been found in previous studies, there was also indication that wearing BWV could result in a 'backfire effect' (Ariel et al., 2016, 2018), whereby 20% of officers indicated they were more likely to report assaults against them when wearing the technology.

Finally, with respect to complaints against police, there were also general trends that are consistent with previous research. Over one-third (37.6% weighted average) of officers showed a consistent belief that BWV would decrease complaints against police, and a large (but significantly declining) percentage of officers believed that BWV footage would provide the best evidence in the event of a complaint against police (71.6% weighted average, declining by 9 percentage points from 79% agree at Time 1). However, around one-quarter (23.9% weighted average) of respondents indicated they were concerned about BWV footage being used against them unfairly in the event of a complaint (with no significant change between Time 1 and Time 3).

Public Attitudes to BWV

The intercept public attitudes survey questions were a subset of the larger question bank involved in the online public survey. From the range of topics covered it was possible to

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compare the estimates produced by these two collection methodologies for attitudes about BWV and community relations, recording decisions, police behavior, and complaints against police. Table 2 displays the extent to which members of the public agreed (strongly agree and agree responses, combined) to a series of questions relating to each of these topics.

Insert Table 2 approximately here

There was strong support for the use of BWV as a community relations tool, with 88.1% (weighted average) of respondents across both surveys indicating all police should wear cameras and 77.5% (weighted average) indicating cameras would make them feel safer in their neighborhood. There was almost unanimous support for the statement that BWV would help deal with situations in the community and almost no concern that cameras would have a detrimental effect on police-community relations. It is also clear from analysis of these first questions in Table 2 that the variation in survey methodologies produced similar (but significantly different) results for online and intercept respondents. In both cases the community relations questions asked in online and intercept format were responded to with significantly more support by online participants.

Looking at recording decisions, there was not strong concern that police use of BWV constituted an invasion of privacy (weighted average 13.3% agree), with more intercept participants concerned about this outcome. One-third of online respondents supported the notion they should have the option of requesting officers stop filming them. An equivalent percentage (38%) of online participants agreed that police should have the option of turning cameras off (which was markedly lower support relative to the 70% of police who agreed with this proposition, Table 1).

There was strong indication from both surveys that the public believe BWV will make officers act more professionally (weighted average 84.7% agree) and that cameras would make police more respectful to the public (81.9% weighted average). This is interesting considering the Time 3 responses from police demonstrating they did not feel the cameras strongly influenced their behavior. There was also clear support for the belief that BWV

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would reduce complaints against police, which mirrored the general trends from officers, but possibly for different reasons.

Online survey respondents were also asked if they had any experiences with police wearing BWV. For a subset of respondents this had occurred, meaning they were able to report how this technology had influenced their behavior: an experience-based response. The remainder of the online survey respondents (without experience interacting with police wearing BWV) were asked how they thought BWV would influence their behavior: a hypothetical response. Table 3 presents the comparisons between the BWV contact and no contact respondents' estimates about how the cameras influenced their behavior (again, with strongly agree and agree responses, combined). Those who had experienced police wearing BWV were less likely to agree the technology (a) enhanced their feeling of safety, (b) increased confidence in the police, or (c) influenced their behavior towards the police. The BWV contact respondents were also more likely to indicate they found the use of the cameras to be annoying.

Insert Table 3 approximately here

Offender Attitudes to BWV

The offender attitudes survey questions also allowed some insight into the time-relevant attitudes of this group in Western Australia towards the significance of BWV for evidence and investigations, community relations, recording decisions, public behavior, and police behavior. Table 4 displays the extent to which the offenders who were surveyed agreed (strongly agree and agree responses, combined) to a series of questions relating to each of these topics. Offenders believed cameras would make court outcomes fairer and had generally positive perceptions of the role BWV could play in enhancing community relations. Compared to police attitudes, the inverse pattern of responses were identified relating to recording decisions from the offenders' perspectives: 19% agreeing police should be allowed to record without permission (compared to 70% of police) and 68% agreeing the public should be allowed to record anything on-duty police do (compared to 17% of police).

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Aligned with police impressions and the impressions of public survey participants who had been in contact with police wearing BWV, only 52% of offenders agreed cameras would reduce the likelihood they would be violent towards police and only 33% thought there would be less crime. As with the public survey respondents, offenders agreed BWV would make police treat people more fairly and reduce the likelihood of excessive force.

Insert Table 4 approximately here

Other information extracted from the DUMA survey of note here related to the offender perceptions that police were already using BWV. In the whole sample, respondents indicated high-levels of awareness that police officers sometimes wear BWV cameras (58% in WA were aware, and 4%, $n = 11$, of the WA sample indicated police had been wearing cameras at the time of arrest, which they were not). These respondents, who indicated they 'just knew' police were wearing cameras were also asked how the cameras influenced their behavior. Despite the small sample size, it is noteworthy that the cameras did not seem to have had a significant impact on increasing offender compliance, with 5 of the 11 respondents indicating the cameras did 'nothing really – didn't make a difference' and there was no real indication that cameras would make respondents 'more likely to do what they were told'. These patterns are consistent with both the perceptions of police and the members of the public who had interacted with BWV.

Discussion

This section summarizes the main trends across the broad areas of interest from the three different survey participant perspectives. Both police and offenders indicated positive support for the role that BWV could play in investigations and evidence, with police expectations about the possible benefits of this technology tempering through the RCT. There was support from all three perspectives about the potential benefits of BWV for community relations. When and who can record footage was a clear area of contention, with respondents across all surveys indicating support for being allowed to record what they want

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but less enthusiasm for other parties to be able to do the same. There was also some indication that BWV could have a positive impact on the behavior of members of the public, but the scope of this impact was deemed to be less for police, public who had encountered police wearing cameras, and offenders. There was also inconsistent attitudes about the potential for BWV to influence police behavior. Officers' perceptions changed through the trial to suggest they felt the technology had limited impact on their behavior. In contrast, the public and offender surveys indicated these groups felt cameras would improve police professionalism, respect, and fairness. Finally, there was a belief from police that when complaints from the public occur, the camera footage would be useful evidence, and some indication they felt complaints (presumably those they deemed to be frivolous) might reduce. Interestingly the public also thought cameras would reduce complaints, but possibly because of their previously discussed perceptions about the potential influence on police behavior.

Implications

This paper presents some interesting implications for BWV research and policy. First, adding to the previous studies that have used multiple data collection points during implementation (e.g., Pelfrey Jr. & Keener, 2018; White, Todak, et al., 2018), this paper demonstrates how experience with BWV cameras alters and shapes officers' perceptions about their utility and influence on behavior. Over time officers became less concerned cameras were detrimentally influencing interactions with the public or reducing discretion. However, consistent with previous research, final opinions did not demonstrate confidence in the 'civilizing effect' of cameras on the publics' behavior. In addition to the importance of when to ask for peoples' opinions, this study also demonstrates the importance of who is asked. Members of the public who had encounters with BWV wearing police generated very different patterns of results about the impact of the cameras on their behavior, relative to public respondents who were hypothesizing about the significance of the technology. Further to this, the findings of this study also demonstrate the significance of methodological decisions about BWV for evaluation results. As is clear from the variation in policy and

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practice summarized by the Police Body Worn Cameras Policy Scorecard (www.bwcscorecard.org) there is huge diversity in BWV implementation decisions across trials – an important aspect of which relates to recording practices. The findings of this research demonstrate diverse opinions about recording decisions – who can record when and what permissions are required. In addition to the multiple time points for data collection and the actual vs. hypothetical influence of cameras, this research also highlights some other methodological decisions that may be influencing the varied and inconsistent results produced within the BWV evaluation literature to date. There is a clear significance of survey methodology for estimates that are produced, with different responses for intercept and online surveys of the public. There is also a subtle but important influence of the starting points for ‘problems’, with potential outcomes of cameras on police and the public in this context reflecting the local starting point for things like assaults on police and complaints by police (demonstrated by Clare et al., under review, to be at ‘floor’ before the introduction of the cameras). Finally, this research also makes important points about how offenders feel about this emerging technology: how they think it influences them and what influence they think it will have on justice outcomes and police misconduct.

Limitations and Future Directions

There are some limitations to the datasets used here that need to be discussed. First, for the police surveys, it was not possible to track officer responses over time, so no within-participant analysis was possible. This limited the statistical power of the analyses that could be conducted and restricted capacity to look at officer engagement (Clare et al., under review) with the trial as a mediating factor influencing their opinion about the technology. Second, given the sampling method involved with the public surveys, the opinions captured in these datasets may not have captured a broad cross-section of expectations for BWV in different WA communities and so should be extrapolated with care. Finally, the offender survey was completed just prior to the other data collection and also slightly prior to the implementation of the BWV trial in this context. Regardless, some of the offenders ‘believed’

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they had encountered BWV when arrested, which is an interesting factor to consider with respect to the Hawthorne effect and the inverse finding from previous research (McClure et al., 2017; White et al., 2017) that people are not always aware when they do encounter BWV. Future research could address these limitations and also continue to isolate the significance of context, implementation policy/practice, and evaluation methodology on the influence of police wearing BWV.

Conclusion

More broadly with respect to the police use of BWV, Alpert and McLean (2018) make some crucial points when asking, “Where is the goal line?” These questions about goals and implementation process are also discussed in by a number of recent papers (e.g., Flight, 2018; Gaub, Todak, & White, 2018; Gaub, White, Padilla, & Katz, 2017; Koen, Willis, & Mastrofski, 2018; White, Todak, et al., 2018). While there is clearly support for the use of this technology, agencies should still have clear goals about why they are seeking to use cameras: what problems do they fix and how will you know if you have been successful? In a recent paper introducing the EMMIE coding scheme for evaluating crime prevention evidence, Johnson, Tilley, and Bowers (2015) emphasize the importance of five dimensions for systematic reviews of crime prevention strategies: (1) the effect, (2) the causal mechanism(s) through which the interventions are meant to work, (3) factors that moderate intervention impacts, (4) implementation issues, and (5) economic costs of intervention. Pre-emptive use of the EMMIE framework by policing agencies seeking to utilize this technology will likely help maximize the benefits and minimize the costs involved.

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Tables

Table 1. Police survey responses across the three data collection periods and Z-scores for difference in proportions (Time 3 – Time 1)

Question focus	Survey question (% Strongly agree/Agree combined)				Z-score (Time 3 – Time 1)
		Time 1 (n = 190)	Time 2 (n = 139)	Time 3 (n = 221)	
Evidence and investigations	BWV improves my ability to gather evidence	79%	84%	80%	0.25
	BWV footage will make it more likely an offender will plead guilty	54%	53%	42%	-2.45
	Capacity to review BWV footage will enhance confidence in giving evidence at court	66%	60%	49%	-3.54
	Recording interviews in the field is more efficient than hard copy statement	64%	57%	59%	-1.04
Community relations	BWV makes members of the public are less likely to approach/engage with officers	28%	23%	13%	-3.78
	Wearing BWV will make police officers more accountable to the public	—	—	50%	—
Recording decisions	Officers should be required to record every interaction with the public	7%	9%	6%	-0.41
	When practical, officers should be inform the public they are being recorded	—	—	47%	—
	Police should be allowed to record members of the public without their permission	—	—	70%	—
	The public should be allowed to record anything the police do while on duty	—	—	17%	—
Influence on public's behaviour	People will become angry when they realise I am recording them on BWV	36%	44%	11%	-6.14
	BWV will help to defuse tense/aggressive situations	14%	28%	31%	4.25
	Officer safety will be increased by wearing BWV	30%	41%	34%	0.87
	Offenders are less likely to resist arrest when officers are wearing BWV	—	16%	8%	—

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Question focus	Survey question (% Strongly agree/Agree combined)				Z-score
		Time 1 (n = 190)	Time 2 (n = 139)	Time 3 (n = 221)	(Time 3 – Time 1)
Influence on police behaviour	BWV will make me more likely to give a formal sanction rather than a warning	24%	26%	19%	-1.23
	When wearing BWV, I feel I have less discretion in dealing with incidents	44%	42%	33%	-2.30
	When wearing BWV I speak to people in exactly the same way as without BWV	21%	54%	63%	9.57
	Overall, officers wearing BWV are less likely to use force	33%	17%	12%	-5.18
	When wearing BWV, I am more inclined to report an assault against me	—	—	20%	—
Complaints against police	Introducing BWV will decrease complaints from members of the public against police	40%	29%	41%	0.21
	Where a complaint is made against police, BWV footage will provide best evidence for investigation of that complaint	79%	64%	70%	-2.11
	BWV footage will be unfairly used against me in disciplinary/complaint matters	33%	5%	28%	-1.10

NB: $|Z\text{-score}| > 1.96$ indicates a significant difference, $p < .05$, $|Z\text{-score}| > 2.58$ indicates a significant difference, $p < .01$, and “—” responses across Times 1 or 2 indicate that question was not asked during that round of the survey.

Table 2. Public survey responses (intercept and online) and Z-scores for difference in proportions

Question focus	Survey question (% Strongly agree/Agree combined)			Intercept	Online
		(n = 428)	(n = 995)	Z-score	
Community relations	BWV cameras should be worn by all police officers	82%	91%	4.36	
	I would feel safer in my neighbourhood if I knew police officers were wearing BWV cameras	72%	80%	3.18	
	The use of BWV cameras will hurt police-community relations	—	6%	—	
	BWV cameras would help police deal with situations in my community	—	96%	—	
Recording decisions	Police use of BWV cameras is an invasion of my privacy	23%	9%	-6.29	
	Police should have the option of turning their BWV camera off in some situations	—	38%	—	
	I should have the option of requesting an officer stop filming me with a BWV camera	—	34%	—	
Influence on police behaviour	Using BWV cameras will make officers act more professionally	90%	83%	-3.73	
	Police will be more respectful to members of the public when using BWV cameras	86%	80%	-2.85	
Complaints against police	The use of BWV cameras will reduce complaints against the police	—	86%	—	
	against police				

NB: |Z-score| > 1.96 indicates a significant difference, $p < .05$, |Z-score| > 2.58 indicates a significant difference, $p < .01$, and “—” responses

indicate that question was not asked on the online survey.

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Table 3. Public online survey responses about the influence of BWV on police-public interactions, comparing respondents who did and did not have contact with BWV wearing officers, with Z-scores for difference in proportions

Survey question (% Strongly agree/Agree combined)	BWV contact (n = 57)	No BWV contact (n = 938)	Z-score
Did/would feel safer knowing that the police were wearing video cameras	65%	93%	4.39
Did/would feel more annoyed or angry being recorded	21%	7%	-2.57
BWV camera did/would make me feel uncomfortable	16%	9%	-1.42
Did/would feel more confident in the police	60%	86%	3.95
Was/would be more cooperative because the BWV camera was on	33%	65%	4.99
Was/would be more cautious about what I said in front of the officer	40%	60%	2.99
Was/would be more careful about how I behaved in front of the officer	32%	64%	5.02

NB: |Z-score| > 1.96 indicates a significant difference, $p < .05$ and |Z-score| > 2.58 indicates a significant difference, $p < .01$.

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Table 4. Offender survey responses

Question focus	Survey question (% Strongly agree/Agree combined, unless otherwise specified)	WA DUMA sample
Evidence and investigations	Court outcomes will be fairer if police wear BWV cameras	74%
Community relations	It is a good idea for police to wear BWV cameras (% yes)	76%
	I would feel better being arrested if I knew police were wearing BWV cameras	64%
	Police wearing BWV cameras will make the streets safer	44%
Recording decisions	Police should be allowed to use BWV cameras to record people without their permission	19%
	The public should be allowed to record anything the police do while their on-duty	68%
Influence on public's behaviour	Arrestees are less likely to be violent against police wearing BWV cameras	52%
	There would be less crime if police wore BWV	33%
Influence on police behaviour	Police wearing BWV cameras will treat people more fairly	72%
	Excessive force less likely during arrests when police wearing BWV cameras	61%