



Nova Southeastern University
NSUWorks

Theses and Dissertations

Abraham S. Fischler College of Education

1-1-2019

Law Enforcement Officer Body-Worn Camera Perceptions: Pre and Post Deployment

Benjamin Aaron Straight

Nova Southeastern University, benstraight@gmail.com

This document is a product of extensive research conducted at the Nova Southeastern University [Abraham S. Fischler College of Education](#). For more information on research and degree programs at the NSU Abraham S. Fischler College of Education, please click [here](#).

Follow this and additional works at: https://nsuworks.nova.edu/fse_etd

 Part of the [Criminology and Criminal Justice Commons](#), and the [Education Commons](#)

Share Feedback About This Item

NSUWorks Citation

Benjamin Aaron Straight. 2019. *Law Enforcement Officer Body-Worn Camera Perceptions: Pre and Post Deployment*. Doctoral dissertation. Nova Southeastern University. Retrieved from NSUWorks, Abraham S. Fischler College of Education. (231) https://nsuworks.nova.edu/fse_etd/231.

This Dissertation is brought to you by the Abraham S. Fischler College of Education at NSUWorks. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of NSUWorks. For more information, please contact nsuworks@nova.edu.

Nova Southeastern University
Abraham S. Fischler College of Education and School of Criminal Justice


Law Enforcement Officer Body-Worn Camera Perceptions: Pre and Post Deployment

by
Benjamin Aaron Straight
A Dissertation Presented to the
Abraham S. Fischler College of Education and School of Criminal Justice
of Nova Southeastern University
in Partial Fulfillment of the Requirements for the Degree of
Doctor of Philosophy


Nova Southeastern University
2019

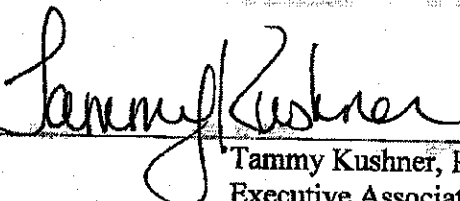
Approval Page

This dissertation was submitted by Benjamin Straight, under the direction of the persons listed below. It was submitted to the School of Criminal Justice, Abraham S. Fischler College of Education, and approved in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Nova Southeastern University.

Approved:  Date: 5/3/2019
Steven Hecht, Ph.D.
Committee Chair

Approved:  Date: 5/3/19
Marcelo Castro, Ph.D.
Committee Member

Approved:  Date: 5/3/19
Grace Telesco, Ph.D.
Committee Member

Approved:  Date: 5/3/19
Tammy Kushner, Psy.D.
Executive Associate Dean

Abstract

Straight, Benjamin Aaron, 2019: Law Enforcement Officer Body-Worn Camera Perceptions: Pre and Post Deployment, Dissertation, Nova Southeastern University, Abraham S. Fischler College of Education, School of Criminal Justice. Descriptors: Body-worn cameras, police technology, police accountability, police misconduct

The 2014 fatal police shooting of Michael Brown resulted in (a) a national outcry for police departments to deploy body-worn cameras; and (b) community members and politicians demanding more transparency in the governmental administration of police work. Despite the increased media attention and deployment of body-worn cameras, there is little research on how law enforcement officers perceive body-worn cameras.

The Miami-Dade Police Department implemented a mandatory body-worn camera program on April 20, 2016. The department agreed to a partnership to conduct research on their officers' body-worn camera perceptions. The department internally distributed an electronic survey to 3,313 sworn officers and 1,410 were completed (a 43% response rate). Of the respondents that chose to participate in answering the demographic questions, 1,084 were male and 273 were female. 281 identified as white, 762 as Hispanic, and 243 as African-American/black, and 69 as other. Respondents averaged 3.6 years of employment at the department, averaged 2.6 years using a body-worn camera, and averaged 14.5 years of policing without a body-worn camera.

The research instrument used in this study was an electronic survey with a four-point Likert Scale (Strongly Agree, Agree, Disagree, Strongly Disagree). The 24 questions were organized into the following five categories: Influencing Citizen Behavior, Influencing Officer Behavior, Completing Paperwork, Comfort and Ease of Use, and Supervisor Use of Body-Worn Camera Data for Administrative Purposes.

The 'agree' responses were reported for comparison to published study purposes. The survey results indicate that body-worn cameras (a) do not influence citizen behavior; (b) influence officer behavior; (c) officers perceive body-worn camera data positively, yet not the paperwork it generates; (d) officers generally perceive body-worn camera ease of use positively, yet the cameras are not comfortable to wear; (e) that officers negatively perceive the supervisor use of body-worn camera data for administrative purposes.

Table of Contents

	Page
Chapter 1: Introduction.....	1
Nature of the Research Problem.....	1
Background and Significance.....	3
Barriers and Issues.....	8
Purpose Statement.....	8
Definition of Terms.....	8
Chapter 2: Literature Review.....	10
The Rialto Experiment	10
The Mesa Police Department	11
The Phoenix Police Department.....	13
The Denver Police Department.....	14
Body-Worn Camera Perceptions Pre-Deployment	15
Body-Worn Camera Impact Studies	18
Body-Worn Cameras Pre and Post Deployment	20
Research Questions.....	21
Conclusion.....	22
Chapter 3: Methodology.....	24
Participants.....	24
Instruments.....	25
Procedures.....	27
Data Analysis.....	28
Confidentiality Statement.....	29
Expected Findings.....	29
Chapter 4: Results.....	30
Chapter 5: Discussion	51
Summary of Findings.....	52
Interpretation of Findings	52
Context of Findings.....	69
Implications of Findings	69
Limitations of the Study.....	71
Future Research Directions.....	72
Summary	74
References.....	77
Appendix	
A Survey Instrument.....	82

Tables

1	Responses (n) and mean for each question	34
2	Percentage of responses for each study: Influencing citizen behavior	37
3	Percentage of responses for each study: Influencing officer behavior	49
4	Percentage of responses for each study: Completing paperwork	41
5	Percentage of responses for each study: Comfort and ease of use	42
6	Percentage of responses for each study: Supervisor use of body-worn camera data for administrative purposes	44
7	Question Category 1: Published studies' similar questions, to the current study's questions, with 'agree' response percentages	45
8	Question Category 2: Published studies' similar questions, to the current study's questions, with 'agree' response percentages	46
9	Question Category 3: Published studies' similar questions, to the current study's questions, with 'agree' response percentages	48
10	Question Category 4: Published studies' similar questions, to the current study's questions, with 'agree' response percentages	49
11	Question Category 5: Published studies' similar questions, to the current study's questions, with 'agree' response percentages	50

Chapter 1: Introduction

The Michael Brown shooting death, in August of 2014, led to a public narrative that there was an increase in fatal police-citizen encounters. This narrative may be attributable to two significant changes that have impacted the scrutiny of policing: the proliferation of social media use and more incidents are captured on video. Regardless, this narrative resulted in community members and politicians demanding more transparency in the governmental administration of police work; law enforcement agencies, across the country, responded by deploying BWCs. BWC proponents advocate that they increase police accountability, improve police officer conduct, and decrease use of force incidents.

Despite the increased media attention and law enforcement agency BWC deployment, there are few published studies on how law enforcement officers perceive BWCs. The bulk of the published studies focus on how BWCs impact arrests, use of force, stop and frisks, citizen complaints filed against police, and other quantifiable routine police practices. These studies are important to inform law enforcement management, yet of equal importance is how law enforcement officers perceive BWC use; after all, without officer buy-in, there would be no BWC footage.

Nature of the Research Problem

BWCs were once viewed as the panacea to improper law enforcement agent interactions with citizens. The public believed that BWCs would be activated the entirety of a law enforcement officers' shift, and that the camera would capture everything- visually and auditory- within its recording parameters. Such implied assumptions, since debunked, have left the public frustrated; this frustration is revealed when there is a news

story involving an officer-involved shooting where the BWC was not activated during the incident.

In 2014, Albuquerque Police Department officer Jeremy Dear was fired for insubordination. Since graduating the police academy in 2008, Dear had numerous citizen complaints filed against him. He had also failed to activate his BWC (despite it being a standard operating procedure) in more than 200 citizen contacts. Dear was thrust into the national news when he failed to activate his BWC in the 2014 fatal shooting of Mary Hawkes (Timberg, 2017). In August of 2016, three Chicago Police Department officers were put on administrative leave for failing to activate their BWCs during an incident that culminated as a fatal police shooting (Sweeney & Gorner, 2016). On September 20th, 2016, Keith Scott was shot to death by a Charlotte-Mecklenburg Police Department officer. This case gained national attention because an assisting officer's BWC was not manually activated until after the shooting, thus there was no video footage accounting for the events which led up to the shooting. It was determined that the BWC was activated 45 seconds too late. Some community members argued that the officer did not activate the BWC intentionally (Lowery, 2016).

In July of 2017, two Minneapolis Police Department officers failed to activate their BWCs during a fatal police shooting incident. The American Civil Liberties Union released a statement criticizing the officers' failure to activate the BWCs and suggested punishment for not doing so (Levenson, 2017). In September of 2018, three Memphis Police Department officers were relieved of duty when they failed to activate their BWCs, during a foot chase, which led to the suspect being shot by one of the officers (Connolly, 2018).

Some law enforcement agencies have issues with their law enforcement officers improperly uploading BWC data post-shift. The Miami Civilian Investigative Panel (CIP) has advised the Miami Police Department that its officers continue to refuse to activate their BWCs. The CIP is an independent group that investigates complaints against Miami Police Department officers. In 2016, the CIP found that dozens of officers were not recording or uploading footage. In 2017, the CIP criticized the Miami Police Department for not fixing the problem (Iannelli, 2018).

The Miami Police Department's jurisdiction is adjacent to the jurisdiction of the Miami-Dade Police Department (MDPD). The MDPD serves Miami-Dade County's unincorporated areas and has mutual aid agreements with other incorporated municipalities, such as the Miami Police Department (Miami-Dade County, 2018). The MDPD has 3,000 sworn officers and deployed BWCs, to all patrol officers, in 2016 (Zea, 2016). The MDPD has similar BWC officer issues as the Miami Police Department.

This proposed study's purpose is to determine how MDPD officers perceive the varied dynamics endemic to BWC use. The researcher has made contact, and secured an engagement letter, to conduct the proposed research with the MDPD. The MDPD desires the proposed study's results because no such research has been conducted in the department. They want to learn if there are negative officer BWC perceptions which could be partially attributable to why some officers fail to activate the BWC or fail to upload the BWC data correctly post-shift.

Background and Significance

Police BWCs have diffused rapidly, since 2014, in the United States. BWCs are perceived to have wide-ranging benefits spanning from increased transparency and police

legitimacy to the reduced use of force and citizen complaints (Gaub, Todak, & White, 2017). BWCs are promoted as the solution to disparate perceptions among the citizenry, public officials, community leaders, and the police in the highly contested arena of police-citizen encounters (Gramaglia, 2016). BWC proponents advocate that they increase police accountability and transparency, improve police officer conduct and citizen behavior, reduce unwarranted complaints, increase officer and citizen safety, decrease use of force incidents, assist in criminal prosecutions, facilitate training, and build trust between the police and their communities (Macari, 2015; Miller, Toliver, & P.E.R.F., 2014). For example: In 2013, Judge Shira Scheindlin ruled that the New York Police Department's stop and frisk procedure was unconstitutional. Judge Scheindlin included BWCs as part of the remediating judicial order (White, 2014).

Social media allows for user commentary and video clips of police-citizen encounters to be shared instantaneously. The commentary and video clips that promote unsavory police-citizen encounters are what receive the most attention; this is attributable to its power to evoke strong viewer emotions. Such commentary and video clips are not fact-checked by viewers; they are accepted as true because it comports with the popular social narrative that police routinely, and intentionally, abuse force. This rise in unsavory police-citizen encounter video clips has created a public misperception of an increase in police abuse of force, which has fueled the public's increased demand for BWCs.

It was in the wake of the Michael Brown shooting on August 9th, 2014, which exacerbated the police intentional abuse of force social narrative and resulted in increased pressure for law enforcement to deploy BWCs. The fatal encounter, between Brown and Ferguson Police Department Officer Darren Wilson, yielded two conflicting narratives.

One held that Brown was shot in the back, with his hands up, while saying 'don't shoot'; this account was given by Dorian Johnson, the man present during the fatal incident. The other account held that Wilson shot Brown in self-defense. Wilson was not wearing a BWC; the social narrative promoted that a BWC would have settled the narrative dispute. This resulted in the Ferguson Police Department deploying BWCs three weeks after Brown's shooting death (Sanburn, 2014).

The Obama Administration promoted the deployment of BWCs, nationwide, after Brown's shooting death. On December 1, 2014 (114 days after Brown's shooting death), former President Barack Obama proposed a three-year, 263-million-dollar spending package to increase BWC use, expand training for law enforcement, and to add additional resources for police department reform (Pickler, 2014). Six months later, in May of 2015, the Bureau of Justice Assistance (BJA), which is part of the Department of Justice's (DOJ) Office of Justice Programs (OJP), announced a 22.5 million-dollar BWC Pilot Implementation Program intended to respond to the immediate needs of local and tribal law enforcement agencies. The BJA provided awards to 73 agencies to purchase more than 50,000 BWCs (U.S. Department of Justice, 2015, para. 2).

The Police Executive Research Forum surveyed a sample of 500 police departments in 2013; they found that 75% did not use BWCs (Miller & Toliver, 2014). The two years following the Brown shooting realized a windfall for BWC manufacturers because (a) police departments sought to 'get ahead' of the police intentional abuse of force social narrative; and (b) there was 22.5 million dollars, in federal funding, to purchase BWCs for law enforcement agencies. As of July 2016, 33 major cities were

using BWCs (Alcorn, 2016). By 2017, 34 states and the District of Columbia had enacted BWC laws (National Conference of State Legislators, 2017).

Studies have demonstrated that officer opinions on BWCs are more negative before law enforcement agencies deploy BWCs as compared to agencies that have deployed BWCs (Smykla, Crow, Crichlow, & Snyder, 2015). Police officers form expectations and assumptions, when new technology is adopted, that may influence behavior. Orlikowski and Gash (1994) refer to this process as developing a technological frame. A technological frame can be helpful or detrimental to the deployment and sustainability of a program. Officers may be resistant to change in their routines, especially to new administrative tasks that disrupt their normal activities. However, if officers are actively involved in adopting a new technological program, the transition will be met with fewer obstacles. This may lead to the diffusion of ideas and attitudes that increases the legitimacy of the program to otherwise skeptical officers.

Research has demonstrated that successful BWC program deployment depends on officer acceptance of the technology (Hedberg, Katz, & Choate, 2016). Officers who hold negative BWC perceptions may subvert their law enforcement agencies' efforts to acquire them or undermine effective BWC deployment during the training process (Jennings, Fridell, & Lynch, 2014). Securing officer's support gives legitimacy to the BWC program and makes its deployment more successful. "Agency leaders should engage in ongoing communication with officers about the program's goals, the benefits and challenges of using cameras, and the agency's expectations of the officers" (U.S. Department of Justice, 2014, p. 36). In fact, the primary 'lesson learned', in a comprehensive multi-state survey asking police managers to identify best practices when deploying a BWC program, was,

"...respondents encouraged agencies planning a BWC program to use a collaborative, team-based approach that includes both internal and external stakeholders in various phases of the process" (Gaub, White, Padilla, & Katz, 2017, p. 3).

This proposed study's research adds to the officer BWC perception studies knowledge base because there are few published studies reporting on officer BWC use perceptions. The literature review yielded eight published studies; three concerning officer BWC perceptions pre-deployment, three concerning officer BWC impact studies, and two concerning officer BWC perceptions pre and post deployment. Each study had a different focus, used a different survey instrument, and similar-themed questions were written differently. This renders it difficult to draw general themes and trends among the studies.

This proposed study seeks to craft survey questions using published studies. Once completed, the survey will undergo a rigorous Delphi Method process; seven law enforcement officers will participate in this process. The goal will be for all participants to find that each question is easy to understand and measures what it is intended to measure.

This proposed study is feasible because the researcher has the time and resources available. The researcher began the first Dissertation Study 'class' on May 7th, 2018. This means that the dissertation would be defended in about one year, on or about April, 2019. This proposed study calls for the electronic survey to be open for two months; therefore, there is ample time to create the survey (using Qualtrics), secure the support of the stakeholders, receive Institutional Review Board approval, administer the survey, analyze the data, and compose dissertation chapters four and five. Finally, the cost of a Qualtrics

student account is minimal and would pose no obstacle to conducting the proposed research.

Barriers and Issues

The primary barrier will be participation. The desired response rate is at least 500 survey responses. This is calculated by using a confidence level of 95%, and a confidence interval of four, for the 3,000 sworn officer MDPD population.

Purpose Statement

The purpose of this proposed study is to determine how MDPD officers perceive BWC use regarding influencing citizen behavior; influencing officer behavior; completing paperwork; comfort and ease of use; and supervisor use of BWC data for administrative purposes. The proposed study's results will be provided to the MDPD management for purposes of determining if there are negative officer BWC perceptions which could be partially attributable to explain why some officers fail to activate the BWC or fail to upload the BWC data correctly post-shift.

Definition of Terms

BWC: Body-worn camera.

BWC Perceptions Pre-Deployment: Individual police officer perceptions categorizing surveyed responses about future BWC use.

BWC Impact Studies: Individual police officer perceptions categorizing surveyed responses about current BWC use.

BWC Perceptions Pre and Post Deployment: Individual police officer perceptions categorizing surveyed responses about future BWC use to then be surveyed after BWC deployment.

Officer BWC perception studies: The term for the eight published studies on police officer perceptions of BWC use. They are comprised of the following studies: Three concerning officer BWC perceptions pre-deployment, three concerning officer BWC impact studies, and two concerning officer BWC perceptions pre and post deployment.

Varied dynamics endemic to future BWC use: This includes individual officer perceptions projecting how BWCs would affect, effect, impact, or otherwise change routine police tasks and procedures, such as use, privacy, convictions, performance of daily tasks, downloading and retrieving data, time spent completing paperwork, quality of evidence, use of force decisions, citizen encounters, community relations, complaints, categories of response calls, public trust, officer safety, stress and anxiety, training, communication, disciplinary action, testimony, and supervisor interaction.

Varied dynamics endemic to current BWC use: This includes individual officer perceptions projecting how BWCs would affect, effect, impact, or otherwise change routine police tasks and procedures, such as use, privacy, convictions, performance of daily tasks, downloading and retrieving data, time spent completing paperwork, quality of evidence, use of force decisions, citizen encounters, community relations, complaints, categories of response calls, public trust, officer safety, stress and anxiety, training, communication, disciplinary action, testimony, and supervisor interaction.

Chapter 2: Literature Review

The deployment of police BWCs has received extensive media attention in recent years. BWCs are believed to achieve several goals, such as reducing police use-of-force and complaints against officers, increasing police legitimacy and transparency, increasing prosecution rates, and improving digital evidence captured by police. The media has hyped the use and efficiency of BWCs to where the public assumes that BWCs can change fundamentally 'flawed' police practices (Ariel, Farrar, & Southerland, 2015). It is the Rialto Experiment that gave legitimacy to this assumption and has been cited as the study 'proving' that BWCs are the panacea to reduce police use of force abuses.

Researchers have studied BWC deployment, and the research (generally) falls into the following two categories: (a) Research using experimental designs to measure BWC impact on arrests, use of force, stop and frisks, citizen complaints filed against police, and other quantifiable routine police practices; and (b) Research focusing on officer BWC perceptions. This second category is further divided into officer BWC perceptions pre-deployment, BWC impact studies, and officer BWC perceptions pre and post deployment. The literature review will address these two categories, and the three-part division in the second category, in order.

The Rialto Experiment

The Rialto Police Department conducted a study of BWCs, in 2012, with 54 participating officers. The department was comprised of 115 sworn officers who patrolled a municipality that was 28.5 miles, serving a population of 100,000 residents. The study was devised to evaluate the use-of-force and citizens' complaints against officers. The department used the prior 12 months (2011) and evaluated the amount of times officers

used force and the amount of citizen complaints filed against officers as a baseline for the 2012 study (Gramaglia, 2016).

Officers were divided into an experimental (wear the BWC) and control group (not wear the BWC) during two shifts. The integrity of the experimental group was measured by the number of footage-hours compared against the assigned shifts as well as dip-sampling dates of footage; it was ascertained that the officers wore the BWCs as assigned. The study's results were striking: BWC use reduced officer use-of-force incidents by 59% and reduced citizens' complaints by 87.5% (Ramirez, 2014). These results have not been replicated in similar studies. Ariel et al. (2015) recognized that a possible limitation was the Hawthorne Effect i.e. when people are aware that they are part of a study, or being watched, they alter their behavior to what they believe is desirable behavior.

The Mesa Police Department

The Mesa police department conducted a study on BWC use from November 1, 2012 to October 1, 2013. The study utilized an experimental research design where, out of a 100-officer sample size, 50 wore BWCs (experimental group) and 50 did not wear BWCs (control group). The study further examined how the mandatory or voluntary assignments of BWCs affected the officers' opinions and experiences of deployed BWCs (Ready & Young, 2015).

The impact of mandatory or volunteer BWC use was studied by selecting half of the experimental group (wore BWCs), from a volunteer list, and the other half of the group was mandatorily-assigned. The selection process of non-volunteers was random, and volunteers were selected before non-volunteers. The 50 officers assigned to the

experimental group were matched to the 50 officers, in the control group, based upon age, race, and gender (Ready & Young, 2015). The study was conducted in two phases. The first phase required BWC activation upon responding to a call or upon contact with the public. The second phase provided the officer BWC activation discretion (Ready & Young, 2015).

The officers in the experimental group (wore BWCs) issued 23.1% more citations and initiated 13.5% more citizen encounters compared to the control group. In contrast, the control group (no BWC) conducted 9.8% more stop and frisks and made 6.9% more arrests. Officers in the experimental group were 25.2% more likely to perceive BWC technology as helpful in their encounters. These officers were also more likely to initiate encounters and issue citations; however, they were less likely to conduct a stop and frisk, even after controlling for officer and situational characteristics. Finally, arrests were more likely to occur during phase two, when BWC activation was discretionary, when compared to phase one when BWC activation was mandatory (Ready & Young, 2015).

This study supports the Ariel et al. (2015) contention, for the Rialto Experiment, that a possible limitation was the Hawthorne Effect i.e. when people are aware that they are part of a study, or being watched, they alter their behavior to what they believe is desirable behavior. This is because the study concluded that officers were more risk averse, and cautious about their actions, when the BWC was activated. Officers who had BWCs activated conducted significantly fewer stop and frisks and arrests than officers who were not wearing BWCs. This is attributable to the potential scrutiny over the reason for the stop, whether reasonable suspicion existed for the stop, or if probable cause existed to make an arrest. Finally, officers were cautious because they were uncertain as

to whether they would be scrutinized over department policies based upon video footage (Ready & Young, 2015).

The second important finding was that officers who had BWCs activated were more likely to issue citations, or a summons, out of fear that they would be reprimanded for conducting a stop without issuing a citation or summons. These officers also had significantly more proactive stops and were more likely to report that the BWC was helpful when they conducted a stop and frisk, made an arrest, issued a citation, or issued a warning during an encounter.

The Phoenix Police Department

In 2013, the BJA awarded the Phoenix Police Department 500,000 dollars to purchase, deploy, and evaluate BWCs. The department purchased 56 BWCs and designated the Maryvale Precinct as the treatment area. Officers assigned to the treatment area were issued BWCs and were provided training in its use, maintenance, and related departmental policy. The study was conducted to examine the effect of deploying BWCs on complaints against police and domestic violence case processing and outcomes (Katz, Choate, Ready, & Nuno, 2014).

The study analyzed the BWC meta-data and found that only 13.2 to 42.2% of incidents were recorded. Domestic violence incidents were the most likely to be recorded (47.5%), followed by violent offenses (38.7), back-up (37), status offenses (32.9), and subject/vehicle stops (30.9). The treatment area realized a 17% increase in arrests compared to 9% in the comparison group (officers not wearing BWCs). Complaints against the treatment area officers declined by 23% compared to a 10.6% increase among comparison officers and a 45.1% increase among patrol officers in other precincts.

Complaints against the treatment area officers were significantly less likely to be sustained; this suggests that the video footage was likely to support the officer. The treatment area officers self-reported data suggested that many complaints were not pursued because of video recording. The BWCs did not appear to have an impact on suspect behavior as measured through resisting arrest. Finally, the analysis determined that domestic violence cases were completed faster following the deployment of BWCs, yet the researchers concluded that this was a product of the addition of a court liaison officer who facilitated domestic violence case processing between the Phoenix Police Department and the Phoenix City Prosecutor's Office (Katz, Choate, Ready, & Nuno, 2014).

The Denver Police Department

Ariel (2017) decided to test whether the Rialto Experiment findings were replicable in a large, metropolitan law enforcement agency, so the researcher recruited the Denver Police Department. Recall that the Rialto Experiment results found that BWC use reduced officer use-of-force incidents by 59% and reduced citizens' complaints by 87.5% (Ramirez, 2014).

The study deployed BWCs to 119 officers in one district (treatment area) while the other five districts were not given BWCs (control area). No specific instructions were provided to the treatment area officers, thus mirroring the Rialto Experiment; they were told to conduct patrol 'as they normally would' yet were required to record every enforcement encounter. Complaints against police, incidents of use of force, and other police outputs were measured before deploying BWCs to the treatment area (baseline) and again during the six months of the study (post-treatment period) (Ariel, 2017).

The results found that the reporting of police officers' use of force, in the treatment area, did not change significantly when compared to the control area. Complaints filed against officers in the control area was 14% higher than in the treatment area. When complaints filed against police for (specifically) use of force are compared, the researchers found that the odds of a complaint in the control area was 35% higher than in the treatment area. The odds of an arrest were 18% higher in control areas when compared to the treatment area (Ariel, 2017).

BWC Perceptions Pre-Deployment

Jennings et al. (2014) conducted a study to examine officer BWC perceptions in the Orlando Police Department (OPD). Their research included a self-administered electronic survey that was distributed before the deployment of BWCs. 95 officers participated. The survey questions addressed how the officers perceived the effects that BWCs might have on citizen behavior, their behavior, the behavior of fellow officers, the impact of BWCs on their own and their fellow officers' use of force, number of internal complaints, and number of citizen-generated complaints. The researchers reported that the OPD officers were generally supportive of BWC use. Over 60% agreed that the OPD should deploy BWCs and 77% agreed that they would feel comfortable wearing them.

Jennings et al. (2014) further reported that OPD officers were mixed in their perceptions of how BWCs would impact officer behavior. 40.7% of the officers thought BWCs would improve citizen behavior and 19.8% thought BWCs would improve their behavior. In a question designed to test administrative discretion, 29.7% agreed that BWCs would increase their likelihood of behaving "by-the-book", yet 42.9% believed that the BWCs would increase the "by the-book" behavior of other officers.

Interestingly, respondents believed it was more likely (63.7%) that BWCs would reduce other officers' willingness to respond to calls for service than their own; 84.4% agreed (or strongly agreed) that BWCs would not reduce their likelihood of responding to calls for service. This reveals that officers' perceptions on how they believe other officers feel about body cameras are different than what the survey results show (Jennings et. al, 2014).

Jennings et al. (2014) also measured officers' perceptions on BWC impact on their use of force; perceptions of the effect on citizen-generated complaints and internal complaints, as well as perceptions of BWC influence on their fellow officers' use of force, citizen-generated complaints, and internal complaints. 3.3% agreed with the statement that wearing BWCs would reduce their use of force. The officers expected more impact agency-wide than they had projected for themselves; 20% believed that BWCs would reduce agency levels of use of force. The Jennings study revealed that, across various surveyed dynamics, that individual officers perceived the impact of BWCs on future overall department behavior to be far greater than the perceived impact on their future behavior.

The Rochester Police Department deployed BWCs in 2017 and the Buffalo Police Department deployed BWCs in 2018. Gramaglia (2016) surveyed each police department to learn the officers' perceptions of the varied dynamics endemic to the future use of body-worn BWCs. The instrument was a self-administered electronic survey. The majority of officers, from both departments, believed that BWCs would help them to secure convictions, yet also believed that BWCs would be a distraction from their daily duties. They also believed that the BWC would be difficult to use (retrieving footage,

comfort of wear, ease of use) and would increase the time spent completing paperwork. They believed they would have a better account of what transpired with the ability to review recorded footage, and the footage will be helpful in improving the quality of evidence needed for court. Finally, the officers believed that their fellow officers would follow departmental procedures more closely when dealing with members of the public.

Ariel (2017) conducted mixed-methods research concerning BWCs. The qualitative element surveyed Denver police officers about their perceptions of future BWC deployment. The survey instrument consisted of open-ended questions. The results revealed that officers perceived BWCs as an administrative mechanism of control, that BWCs would impede police work, that BWCs were a means to reduce discretion, and that BWCs introduced enhanced liability for decisions they would otherwise make more freely.

Drawing comparisons, among these three officer BWC perception pre-deployment studies, is difficult for a few reasons. Ariel's (2017) research utilized open-ended questions, whereas the Jennings (2014) and Gramaglia (2016) studies utilized fixed-choice questions. This only allows comparisons to be drawn for the latter two studies. The Gramaglia (2016) study was far more comprehensive than the Jennings (2014) study thereby narrowing the possible pool of similarities to whether the questions surveyed in the Jennings (2014) study were surveyed in the Gramaglia (2016) study.

Each of these two studies used a different survey instrument, therefore similar-themed questions were written differently. Similar themes, with different question wording, did not yield a high enough level of confidence to allow for comparisons to be drawn. There were some questions that were written similarly, yet the response statistics

were divergent i.e. Jennings (2014) found that 42.9% believed that the BWCs would increase the “by the-book” behavior of other officers, yet Gramaglia (2016) found that 79% of responses agreed with a similar question.

Therefore, the officer BWC perception pre-deployment studies reveal the overall theme of officers perceiving BWCs as an excellent tool for documenting evidence, reviewing an incident for report writing, and increasing "by-the-book" behavior of other officers. In contrast, officers perceive BWCs as a vehicle for police managers to impose increased liability on officer conduct and discretion.

BWC Impact Studies

The Mesa, Arizona, police department conducted a study on BWC use from November 1, 2012 to October 1, 2013. The department utilized an experimental research design. The sample size included 100 officers; the treatment group 50 wore BWCs and a control group of 50 officers did not wear BWCs (Ready & Young, 2015).

The officers assigned a camera were 25.2% more likely to perceive body camera technology as helpful in the type of situation in which they were involved. Officers assigned a BWC were more likely to report, after an incident, that a BWC was helpful. Those officers who volunteered to wear a BWC were much more likely to perceive the cameras as helpful relative to control and treatment officers who were mandatory assigned. These findings suggest that police are more likely to see the practical utility of the BWCs when they are assigned to wear them and during encounters where they must take coercive action (Ready & Young, 2015).

In 2013, the Bureau of Justice Assistance, through the SMART Policing Initiative, awarded the Phoenix Police Department 500,000 dollars to purchase, deploy, and

evaluate BWCs. The design and deployment of the program included purchasing 56 BWCs (Katz, Choate, Ready, & Nuno, 2014).

The study found that there was resistance among officers toward wearing BWCs. The technology was found to be comfortable and easy to use, in general, yet officers were dissatisfied with several BWC technological features. For example: Officers reported that it took a long time to download data, that it lengthened the amount of time it took them to complete reports and reported being concerned that the video might be used against them. These concerns were reflected in the low compliance rates for activating the BWCs. However, officers agreed that BWCs provided a more accurate account of an incident and improved the quality of evidence (Katz et. al., 2014, p. 23).

Gaub, Todak, and White (2017) conducted in-person interviews with officers from more than 15 different specialized police units and collected their perceptions on a wide range of issues related to BWCs. The results revealed that the most significant benefit was the ability to use BWC footage to facilitate accurate report writing. Other benefits included documenting conversations, citizen behavior, evidence collected at the scene, and for eliminating frivolous citizen complaints.

The officers expressed many of the same concerns, such as the increased workload associated with downloading and tagging videos, charging the BWCs, and documenting the video in written reports. They also felt that BWCs created an environment where officers are not taken at their word i.e. 'if it did not happen on video, then it did not happen at all'. Finally, the officers universally complained about the BWC available mounting options (Gaub et al., 2017).

Comparing officer BWC impact studies yields the same obstacles when comparing officer BWC perceptions pre-deployment studies; each study used a different survey instrument, similar-themed questions were written differently, and some questions were written similarly, yet the response statistics were divergent.

The officer BWC impact studies partially reinforce officers' BWC perceptions pre-deployment; they are a good tool to document evidence and to review video footage for report writing. However, officers also report that BWC technology features increased workload (download data, complete reports, etc.) while expressing concerns that the footage might be used against them.

BWCs Pre and Post Deployment

Hyatt, Mitchell, and Ariel (2017) surveyed 250 sworn officers of a large transit police department located in a major eastern American metropolitan city. They conducted the research by utilizing an in-person, self-administered written survey. The survey was administered one month before BWC deployment and seven months post BWC deployment. The most striking results focused on the impact of BWCs on department culture. The post BWC deployment survey revealed a significantly higher measure of disagreement with the idea that deployment of BWCs was a function of managerial oversight. Officers also reported a significantly more positive perception, of BWC influence, on overall officer morale with significantly less disagreement that BWCs represent a positive change. "Taken together, these findings suggest that officers may have held a number of concerns about BWCs that, after working under the policy, were proven to be unfounded" (Hyatt, Mitchell, & Ariel, 2017, p. 2017).

Gaub, Choate, Todak, Katz, and White (2016) distributed a self-administered written survey concerning officer BWC perceptions, in three western police departments, before and after deployment. The results found that, pre-deployment, more than 50% of officers (in each of the three departments) agreed that BWCs will produce more accurate account of incidents, improve the quality of evidence, officers will feel like they have less discretion, will be more cautious in making decisions, and will act more professional. They also agreed in the utility of BWCs in prosecuting domestic violence cases, especially when the victim is unwilling to testify.

The post-deployment survey results revealed that more than 50% of officers, in each (of three) departments, agreed that BWCs provided a more accurate account of incidents, improved the quality of evidence, officers felt like they had less discretion, and the equipment was easy to use (Gaub et al., 2016).

Comparing the two officer BWC perception pre and post deployment studies creates the same obstacles in comparing the pre and post deployment studies and the impact studies. The Hyatt, Mitchell, and Ariel (2017) study was focused on the perceived impact of BWCs on department culture, whereas the Gaub, Choate, Todak, Katz, and White (2016) study was focused on officer BWC perception of tactical use. Each of these two studies used a different survey instrument, therefore similar-themed questions were written differently. Similar themes, with different question wording, did not yield a high enough level of confidence to allow for comparisons to be drawn. There were some questions that were written similarly, yet the response statistics were divergent.

Research Questions

1. How do MDPD officers perceive BWCs influencing citizen behavior?

2. How do MDPD officers perceive BWCs influencing police officer behavior?
3. How do MDPD officers perceive BWC data for completing paperwork?
4. How do MDPD officers perceive BWC comfort and ease of use?
5. How do MDPD officers perceive supervisor use of BWC data for administrative purposes?
6. How do the proposed study's results compare, by question, to published studies reporting on officer BWC perceptions post deployment?

Conclusion

The research focusing on officer BWC perceptions, pre and post deployment, resulted in few consistent themes across the studies. In the pre-deployment studies, the similar themes are that BWCs will produce more accurate accounts of incidents, improve the quality of evidence, and increase 'by-the-book' behavior (more cautious in making decisions and acting more professionally). In contrast, officers perceive BWCs as a vehicle for police managers to impose increased liability on officer conduct and discretion.

In the post-deployment studies, the consistent themes are (a) BWCs provide a more accurate account of incidents and improved the quality of evidence; (b) officers report that BWC technology features increased workload (download data, complete reports, etc.); (c) officers express concerns that the footage might be used against them; (d) officers use less discretion during official law enforcement matters; and (e) officers are more cautious in making decisions.

BWCs are a law enforcement technology that will increase in use as law enforcement agencies realize their utility and the public continues to demand their

deployment. Research has demonstrated that a successful BWC deployment program depends on officer acceptance of the technology (Hedberg, Katz, & Choate, 2016). There are few published studies on officer BWC use perceptions, and, within these studies, there are few aligned themes.

This proposed study is needed because it would provide valuable insight into MDPD officers' BWC use perceptions. MDPD management could utilize the results to address (possible) issues endemic to officers' failure to activate BWCs and the failure to properly upload BWC data post-shift. This proposed study is further needed to add to the few published studies on officer BWC use perceptions.

Chapter 3: Methodology

The researcher utilized a survey cross-sectional research design. The study's population was 3,000 sworn MDPD officers. Every sworn officer was provided instructions about how to access and participate in the electronic survey. The survey was anonymous.

The study's data was collected internally by the MDPD. It is departmental policy that electronic surveys be internally facilitated. The data was provided to the researcher after the time period to participate closed. The 24 survey questions each consisted of a 4-point Likert scale response. The survey data was analyzed, by question, using the percentages based upon the respondent's selected option on the 4-point Likert scale.

Participants

The study's population was the 3,000 MDPD officers. The accessible population was the same as the sampling frame, which were the MDPD officers. Nonprobability sampling was used because the proposed study did not involve random selection. Purposive sampling was used because the MDPD officers were selected with the purpose of (a) studying officer BWC perceptions post deployment; and (b) the MDPD deployed BWCs in 2016 (with data collection in 2019).

Demographic information was recorded in the study. The participant was asked to identify sex, race, and the number of years policing with a BWC. Creative Research Systems (2012) hosts a website where a free Sample Size Calculator is provided as a public service; this calculator was used to determine that the desired response rate of at least 500 survey responses. This was calculated by using a confidence level of 95%, and a confidence interval of four, for the 3,000 MDPD officers.

Instruments

The study's survey instrument was created by the researcher, with guidance and feedback from the researcher's Dissertation Committee Chair (Dr. Steven Hecht), with influence from published BWC studies, use of the 'Revision to the Department Manual, New Policy, CHAPTER 33 - PART 1 - BODY-WORN CAMERA SYSTEM' (MDMP Memo) released on April 20th, 2016, and using the Delphi Method to revise survey questions.

There are four published officer BWC perception post deployment studies. Katz et al. (2014), Smykla et al. (2015), and Gaub et al. (2016) influenced the initial survey questions' formation; this is because these were the only three published officer BWC perception studies post deployment that used a Likert Scale and reported in percentages. This allowed the researcher to compare the study's results with published study results. Ariel (2017) used a qualitative model for research; this excluded the study from comparison with the other three studies. The published studies' questions concerned, or were organized in part, into what the researcher determined to be five general categories: BWCs influencing citizen behavior, influencing officer behavior, completing paperwork, comfort and ease of use, and supervisor use of BWC data for administrative purposes.

Questions 7, 8, and 9 used terminology specific to the MDPD Memo. This memo codified the MDPD BWC system departmental policy. Terminology is particular to police departments, so using MDPD Memo terminology was for the purpose of using terms and concepts understood by the participants. The general term 'data' was used because the MDPD Memo defined data as, "Audio, video, and metadata captured on the

BWC" (Perez, 2016, p. 2). Furthermore, the terms 'casual encounter' (question 7), and 'official law enforcement matters' (questions 8, 9) are defined in the MDPD Memo.

Questions 19, 20, 22, 23, and 24 addressed specific mandates in the MDPD Memo. Questions 19 and 20 concerned functional knowledge of the BWC system. Question 19 concerned 'assigning data into categories'; MDPD officers are required to "...shall be responsible for reviewing the footage and assignment data into categories in accordance with the data management system" (Perez, 2016, p. 6). Question 20 concerned 'tagging and labeling data segments of evidentiary value'; MDPD officers are required to "If applicable, the officer will tag segments of the recordings that have evidentiary value..." (Perez, 2016, p. 6).

Questions 22, 23 and 24 addressed supervisor inspections. Question 22 inquired as to whether data was used, by supervisors, to conduct arbitrary compliance reviews. The MDPD Memo states, "Supervisors will not conduct arbitrary compliance reviews" (Perez, 2016, p. 6). Question 23 inquired as to whether data obtained, by supervisors, was superior to the data contained in departmental reports; the MDPD Memo mandates that "Data recordings are intended to supplement departmental reports" (Perez, 2016, p. 8). Question 24 addressed indiscriminate supervisor use of data for disciplinary purposes; the MDPD Memo states that, "BWC data will not be utilized indiscriminately for disciplinary purposes" (Perez, 2016, p. 7).

The next step was to gain survey validity. This was accomplished by using the Delphi Method; this is also known as 'absentee brainstorming' because participants share ideas in writing (or email) without meeting face-to-face (Beebe & Masterson, 2015, p. 301). The researcher recruited seven LEOs that he knew personally, and survey question

feedback was provided directly to the researcher via email (no group emails). In total, seven LEOs - with 102 years of law enforcement experience spanning 10 law enforcement agencies- participated in the Delphi Method from November 14th to December 15th, 2018. The LEOs were requested to carefully review the survey to (a) determine if each question was easy to understand; and (b) assess if each question measured what it intended to measure. Feedback was considered, and the survey was revised, until all seven LEOs independently agreed that the survey questions were easy to understand and that each question measured what it intended to measure.

Procedures

The researcher utilized a descriptive, cross-sectional survey research design. Every MDPD officer was provided instructions about how to access and participate in the electronic survey. The survey was anonymous because an anonymous survey may yield more truthful responses. An officer might be hesitant to respond honestly when her or his name would be attached to the response, yet such hesitancy could be alleviated when responding anonymously.

The researcher emailed the MDPD general inquiry email address, provided on the department's website, in early October of 2018. The email was a general solicitation explaining the purpose of the BWC camera electronic survey research and requesting a research partnership. The researcher soon received a reply from an Administrative Lieutenant (AL) in the Office of the Deputy Director (Strategic Planning and Development Section). The AL expressed interest in partnering for research purposes. Communication continued, and details were discussed, until the AL provided an MDPD site acceptance letter.

The first step was to submit the approved research Proposal, and the MDPD engagement letter, to the Institutional Review Board (IRB). Upon IRB approval, the next step was to partner with a point of contact at the MDPD Information Technology division; this partnership was supposed to consist of the researcher working with the point of contact to ensure that research protocols were met (cover letter) and to ensure survey accuracy. The next step was for the MDPD to distribute the survey. The next step was to receive the data from the MDPD. The final step was to interpret the data and finalize the study by completing dissertation chapters four and five.

Data Analysis

The survey data was collected, by question, based upon the participant's response on the 4-point Likert scale. A 'neutral' option was not included per the AL's verbal implication; the MDPD implied definitive, not neutral, responses to the survey questions i.e. it was implied that the respondents might select 'neutral' due to (a) fears that the respondent's identification could be revealed; and (b) an option to not provide a definitive response when a definitive response was sought.

The responses, for each question, were calculated to percentages. The data was analyzed to determine how MDPD officers perceive BWC use regarding influencing citizen behavior; influencing officer behavior; completing paperwork; comfort and ease of use; and supervisor use of BWC data for administrative purposes. The percentages of 'Strongly Agree' (SA) and 'Agree' (A), and 'Strongly Disagree' (SD) and 'Disagree' (D), are reported for each question (see table 1).

There are three published officer BWC perception post deployment studies; each utilized a Likert Scale and reported the results by question 'agree' percentage response.

Gaub et al. (2016) and Katz et al. (2014) reported 'agree' percentage response rates; Smykla et al. (2015) reported 'strongly agree' and 'agree' response percentage rates. For comparison purposes, the study's 'agree' response percentages (strongly agree and agree) were combined and Smykla et al.'s (2015) 'strongly agree' and 'agree' response percentages were combined. This allowed for question 'agree' percentage responses to be compared between the current study and each published study.

Confidentiality Statement

All data obtained was kept anonymous (names were not requested). The data was kept confidential and stored on the researcher's two-step password-protected computer (no cloud storage) and was only be reported in an aggregate format (by reporting only combined results and never reporting individual results). All data was concealed; no one, other than the researcher, had access to it. The researcher did not know the survey's origins i.e. the ISP address, or physical location, where the survey was completed because the MDPD internally facilitated the survey and provided the resulting data to the researcher. Data will be retained for at least three years in compliance with federal regulations.

Expected Findings

The researcher expected the MDPD survey results would be similar to the post-deployment study themes: (a) BWCs provide a more accurate account of incidents and improved the quality of evidence; (b) officers report that BWC technology features increased workload (download data, complete reports, etc.); (c) officers express concerns that the footage might be used against them; (d) officers use less discretion during official law enforcement matters; and (e) officers are more cautious in making decisions.

Chapter 4: Results

Table 1 provides the response numbers for each question, each questions' mean, and the categories' mean (mean across questions). Each questions' weighted mean was calculated by assigning numerical values, to each response option, with '3' assigned to 'Strongly Agree', '2' assigned 'Agree', '1' assigned to 'Disagree', and '0' assigned to 'Strongly Disagree'.

The numbers for each response option were multiplied, against their respective weights, to calculate each question's weighted mean. The question means, in each category, were calculated to find the categories' mean (mean across questions). A mean of 1.5 (or greater) indicated that the respondents were more like to agree, than to disagree, with the questions in the category.

The first research question category, "How do MDPD officers perceive BWCs influencing citizen behavior?" results revealed that BWCs do not influence citizen behavior ($M = 1.194$); 68% of respondents 'disagreed' and 32% 'agreed'. The respondents were more likely to disagree, than agree, with the questions in this category. The second research question category, "How do MDPD officers perceive BWCs influencing police officer behavior?" results revealed that BWCs influence officer behavior ($M = 1.874$); 59% of respondents 'agreed' and 41% 'disagreed'. The respondents were more likely to agree, than disagree, with the questions in this category.

The third research question category, "How do MDPD officers perceive BWC data for completing paperwork?" results revealed that officers perceive BWC data positively, yet not the paperwork it generates ($M = 1.436$); 53% of respondents 'disagreed' and 47% 'agreed'. The respondents were more likely to disagree, than agree,

with the questions in this category. The fourth research question category, "How do MDPD officers perceive BWC comfort and ease of use?" results revealed that officers generally perceive BWC ease of use positively, yet the cameras are not comfortable to wear ($M = 1.715$); 70% of respondents 'agreed' and 30% 'disagreed'. The respondents were more likely to agree, than disagree, with the questions in this category.

The fifth research question category, "How do MDPD officers perceive supervisor use of BWC data for administrative purposes?" results revealed that officers negatively perceive the supervisor use of BWC data for administrative purposes ($M = 1.845$); 58% of respondents 'agreed' and 42% 'disagreed'. The respondents were more likely to agree, than disagree, with the questions in this category. The sixth research question, "How do the proposed study's results compare, by question?" results are addressed in tables 7 - 11.

Tables 2 through 6 are organized by question category and were created to compare the current study's findings, to the three published study findings, for each question (when there was a similar question). The agree percentage responses were reported, for each question, and the difference in proportions (chi alpha test of proportions) was calculated between the current study question and each of the three published study questions (when there was a similar question). There were 17 questions where $p < .05$, so the null hypothesis was rejected i.e. there was a significant difference with respect to the proportion of respondents who agree to the question between the published study and the current study.

The question agreement differences, when significant, are hypothesized to be attributable to a variety of factors. The MDPD's required BWC use for three years before

the current study (long-term use), and that the respondent's averaged 2.6 years of BWC use, are largely attributable to the significant differences found in the first two question categories- 'Influencing Citizen Behavior' and 'Influencing Officer Behavior'. The three published study respondents only used BWCs for two weeks to four months; this is not much time for respondents to accurately assess how it influences citizens and officers. The current study's responses were inherently more reliable based upon long-term BWC use.

The significant agreement differences, in the third and fourth categories 'Completing Paperwork' and 'Comfort and Ease of Use', are hypothesized to be attributable to the BWC model used in each study. Three different BWC models were used in the studies, which were conducted in 2014, 2016, and 2019. BWC systems experienced great technological improvements during the five-year span between 2014 - 2019. Software has become more user-friendly, audio and video data have greatly improved, camera size has been reduced, and uniform-mounting options have increased. The significant differences, in the fifth category 'Supervisor Use of Body-Worn Camera Data for Administrative Purposes', are hypothesized to be attributable to different departmental policies, the consistency with which policies are followed, and how different departments have varied administrative cultures and practices.

Tables 7-11 pertain to comparing the current study questions, to the three published studies questions, for each question that was similar. The Katz et al. (2014), Smykla et al. (2015), and Gaub et al. (2016) studies did not report 'agree' response numbers for each question; only the 'agree' percentage responses were reported. Each current study question number of responses for 'strongly agree' and 'agree' were added

and converted to a total 'agree' percentage. This allowed for comparison (by 'agree' percentage response) of current study questions, to the three published studies questions, for each question that was similar.

17 questions had significant agree percentage response differences; seven did not. The current study's questions 2, 14, 15, 19, and 20 did not pose a similar question to any question in the three published studies. This leaves two questions, where there were similar questions in the published studies, that did not have significant agree percentage response differences i.e. the null hypothesis was accepted: there was not a significant difference with respect to the proportion of respondents who agree to the questions between the published study and the current study. Question 3 asked if 'suspects are likely to resist arrest' when a citizen knows that an officer is wearing an activated BWC; 12% agreed in Katz et al. (2014), 24% agreed in Gaub et al. (2016), and 20% agreed in the current study. Question 12 asked if 'officers spend less time filling out paperwork'; 3% agreed in Katz et al. (2014), 9% agreed in Gaub et al. (2016), and 10% agreed in the current study.

Table 1. Responses (n) and mean for each question

Question	(3) Strongly Agree	(2) Agree	(1) Disagree	(0) Strongly Disagree	Mean
Influencing Citizen Behavior					
Q1: Citizens are more cooperative when asked questions.	84	527	557	156	1.407
Q2: Citizens are more compliant with officer verbal commands.	50	512	606	152	1.348
Q3: Suspects are less likely to resist arrest.	23	235	789	272	1.007
Q4: Citizens are less verbally hostile towards officers.	29	315	734	239	1.102
Q5: Citizens are less physically hostile towards officers.	23	312	765	218	1.106
Mean Across Questions = 1.194					
Influencing Officer Behavior					
Q6: Are more likely to give citations instead of warnings.	187	375	627	127	1.473
Q7: Are less likely to engage in casual encounters.	340	511	403	60	1.861
Q8: Use less discretion during					

official law enforcement matters.	392	477	362	82	1.898
Q9: Are more cautious in decision-making during official law enforcement matters.	364	655	234	56	2.014
Q10: Are more likely to follow departmental procedures.	272	719	248	70	1.911
Q11: Have hesitated in elevating the use of force.	511	468	267	62	2.092

Mean Across Questions = 1.874

Completing Paperwork

Q12: Officers spend less time filling out paperwork.	22	110	792	384	0.824
Q13: Officers have more accurate incident accounts.	135	794	307	70	1.761
Q14: Data assists officers in completing paperwork.	156	767	306	77	1.767
Q15: Officers rely more on data, than their memories, to complete paperwork.	88	470	614	133	1.393

Mean Across Questions = 1.436

Comfort and Ease of Use

Q16: It is easy to retrieve data for a specific incident.	147	809	275	74	1.789
Q17: The equipment is easy to use.	172	878	196	57	1.896
Q18: The equipment is comfortable to wear.	65	535	492	212	1.347
Q19: It is easy to assign data into categories.	101	846	276	81	1.742
Q20: It is easy to tag and label data segments of evidentiary value.	91	843	292	77	1.728
Q21: It is easy to upload data.	121	867	237	79	1.79

Mean Across Questions = 1.715

Supervisor Use of Body-Worn Camera Data for Administrative Purposes

Q22: Used by supervisors to conduct arbitrary compliance reviews.	254	774	227	49	1.946
Q23: Regarded by supervisors as superior to data contained in departmental reports.	202	741	305	55	1.837
Q24: Used by supervisors indiscriminately for disciplinary purposes.	288	506	405	103	1.752

Mean Across Questions = 1.845

Table 2. Percentage of responses for each study re: Influencing citizen behavior

Response	Present Study % (n)	Katz et al % (n)	Gaub et al. % (n)	Smykla et al. % (n)	Prop _{diff(1)} % (χ^2)	Prop _{diff(2)}	Prop _{diff(3)}
----------	------------------------	---------------------	----------------------	------------------------	-------------------------------------------	-------------------------	-------------------------

Influencing Citizen Behavior:

Question 1: Citizens are more cooperative when asked questions.

Strongly agree	6.34(1,324)						
Agree	39.80(1,324)	25.7(56)	50.53(358)				
Disagree	42.07(1,324)						
Strong disagree	11.78(1,324)						
Total Agree ¹	46.14	25.7	50.53		20.44(9.052)**	4.39(2.179)	

Question 2: Citizens are more compliant with officer verbal commands.

Strongly agree	3.78(1,320)
Agree	38.78(1,320)
Disagree	45.09(1,320)
Strong disagree	11.51(1,320)
Total Agree ¹	42.56

Question 3: Suspects are less likely to resist arrest.

Strongly agree	1.74(1,319)				
Agree	17.81(1,319)	11.8(56)	23.76(358)		
Disagree	59.81(1,319)				
Strong disagree	20.62(1,319)				
Total Agree ¹	19.55	11.8	23.76	7.75(2.075)	4.21(3.066)

Question 4: Citizens are less verbally hostile towards officers.

Strongly agree	2.20(1,317)				
Agree	23.91(1,317)	25.7(56)	40.16(358)		
Disagree	55.73(1,317)				
Strong disagree	18.14(1,317)				
Total Agree ¹	26.11	25.7	40.16	0.41(0.005)	14.05(26.909)***

Question 5: Citizens are less physically hostile towards officers.

Strongly agree	1.74(1,318)				
Agree	23.67(1,318)	25.7(56)	40.16(358)		
Disagree	58.04(1,318)				
Strong disagree	16.54(1,318)				
Total Agree ¹	26.10	25.7	40.16	0.4(0.004)	14.06(26.957)***

Table Notes: Total Agree¹ is the sum of 'agree' and 'strongly agree'. Differences in proportions are reported between the present study and the relevant prior work, and evaluated for statistical significance using the chi-square test of proportions. Degrees of freedom equals one for all chi-square values.

* p < .05 ** p < .01 *** p < .001

Table 3. Percentage of responses for each study: Influencing officer behavior

Response	Present Study % (n)	Katz et al % (n)	Gaub et al. % (n)	Smykla et al. % (n)	Prop _{diff(1)} % (X ²)	Prop _{diff(2)}	Prop _{diff(3)}
Influencing Officer Behavior:							
Question 6: Are more likely to give citations instead of warnings.							
Strongly agree	13.2(1,316)						
Agree	28.49(1,316)	37.5(56)	19.83(358)				
Disagree	47.64(1,316)						
Strong disagree	9.65(1,316)						
Total Agree ¹	41.69	37.5	19.83		4.19(0.388)	21.86(57.61)***	
Question 7: Are less likely to engage in casual encounters.							
Strongly agree	29.85(1,314)			18(24)			
Agree	36.32(1,314)	37.1(56)	39.6(358)	24(24)			
Disagree	27.57(1,314)						
Strong disagree	6.09(1,314)						
Total Agree ¹	66.17	37.1	39.6	38	29.07(19.932)***	26.57(83.050)***	28.17(8.289)***
Question 8: Use less discretion during official law enforcement matters.							
Strongly agree	29.85(1,313)						
Agree	36.32(1,313)	80.13(56)	64.7(358)				
Disagree	27.57(1,313)						
Strong disagree	6.24(1,313)						
Total Agree ¹	66.17	80.13	64.7		13.96(4.712)*	1.47(0.270)	
Question 9: Are more cautious in decision-making during official law enforcement matters.							

Strongly agree	27.80(1,309)				
Agree	50.53(1,309)	64.88(56)	66.16(358)		
Disagree	17.87(1,309)				
Strong disagree	4.27(1,309)				
Total Agree ¹	78.33	64.88	66.16	13.45(5.617)*	14.17(30.319)***

Question 10: Are more likely to follow departmental procedures.

Strongly agree	20.77(1,309)				
Agree	54.92(1,309)	39.55(56)	55.96(358)		
Disagree	18.94(1,309)				
Strong disagree	5.34(1,309)				
Total Agree ¹	75.69	39.55	55.96	36.14(36.619)***	19.73(53.616)***

Question 11: Have hesitated in elevating the use of force.

Strongly agree	1.74(1,308)			4(24)		
Agree	23.67(1,308)	58.73(56)	55.8(358)	25(24)		
Disagree	58.04(1,308)					
Strong disagree	16.54(1,308)					
Total Agree ¹	25.41	58.73	55.8	29	33.32(30.385)***	30.39(119.3)*** 3.59(0.160)

Table Notes: Total Agree¹ is the sum of 'agree' and 'strongly agree'. Differences in proportions are reported between the present study and the relevant prior work, and evaluated for statistical significance using the chi-square test of proportions. Degrees of freedom equals one for all chi-square values.

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 4. Percentage of responses for each study re: Completing paperwork

Response	Present Study % (n)	Katz et al % (n)	Gaub et al. % (n)	Smykla et al. % (n)	Prop _{diff(1)} % (X ²)	Prop _{diff(2)}	Prop _{diff(3)}
----------	------------------------	---------------------	----------------------	------------------------	------------------------------------------------	-------------------------	-------------------------

Completing Paperwork:

Question 12: Officers spend less time filling out paperwork.

Strongly agree	1.68(1,308)						
Agree	8.40(1,308)	2.9(56)	8.93(358)				
Disagree	60.55(1,308)						
Strong disagree	29.35(1,308)						
Total Agree ¹	10.08	2.9	8.93		7.18(3.134)	1.15(0.419)	

Question 13: Officers have more accurate incident accounts.

Strongly agree	10.33(1,306)						
Agree	60.79(1,306)	58.8(56)	79(358)				
Disagree	23.55(1,306)						
Strong disagree	5.35(1,306)						
Total Agree ¹	71.12	58.8	79		12.32(3.925)*	7.88(8.809)**	

Question 14: Data assists officers in completing paperwork.

Strongly agree	11.94(1,306)
Agree	58.72(1,306)
Disagree	23.43(1,306)
Strong disagree	5.89(1,306)
Total Agree ¹	70.66

Question 15: Officers rely more on data, than their memories, to complete paperwork.

Strongly agree	6.74(1,305)
Agree	36.01(1,305)
Disagree	47.04(1,305)
Strong disagree	4.27(1,305)
Total Agree ¹	42.75

Table Notes: Total Agree¹ is the sum of 'agree' and 'strongly agree'. Differences in proportions are reported between the present study and the relevant prior work, and evaluated for statistical significance using the chi-square test of proportions. Degrees of freedom equals one for all chi-square values.

* p < .05 ** p < .01 *** p < .001

Table 5. Percentage of responses for each study: Comfort and ease of use

Response	Present Study % (n)	Katz et al % (n)	Gaub et al. % (n)	Smykla et al. % (n)	Prop _{diff(1)} % (X ²)	Prop _{diff(2)}	Prop _{diff(3)}
----------	------------------------	---------------------	----------------------	------------------------	------------------------------------------------	-------------------------	-------------------------

Comfort and Ease of Use:

Question 16: It is easy to retrieve data for a specific incident.

Strongly agree	11.26(1,305)						
Agree	61.99(1,305)	26.5(56)	48.73(358)				
Disagree	21.07(1,305)						
Strong disagree	5.67(1,305)						
Total Agree ¹	73.25	26.5	48.73		46.75(57.339)***	24.52(77.539)***	

Question 17: The equipment is easy to use.

Strongly agree	13.20(1,303)			
Agree	67.38(1,303)	61.8(56)	39(358)	

Disagree	15.04(1,303)				
Strong disagree	4.37(1,303)				
Total Agree ¹	80.58	61.8	39	18.78(11.742)***	41.58(238.727)***

Question 18: The equipment is comfortable to wear.

Strongly agree	4.98(1,304)				
Agree	41.02(1,304)	57.6(56)	29.56(358)		
Disagree	37.73(1,304)				
Strong disagree	16.25(1,304)				
Total Agree ¹	46	57.6	29.56	11.6(2.902)	16.44(31.055)***

Question 19: It is easy to assign data into categories.

Strongly agree	7.74(1,304)
Agree	64.87(1,304)
Disagree	21.16(1,304)
Strong disagree	6.21(1,304)
Total Agree ¹	72.61

Question 20: It is easy to tag and label data segments of evidentiary value.

Strongly agree	6.98(1,303)
Agree	64.69(1,303)
Disagree	22.40(1,303)
Strong disagree	5.90(1,303)
Total Agree ¹	71.67

Question 21: It is easy to upload data.

Strongly agree	9.27(1,304)		
Agree	66.48(1,304)	23.5(56)	24.16(358)
Disagree	18.17(1,304)		

Strong disagree	6.05(1,304)					
Total Agree ¹	75.75	23.5	24.16		52.25(75.385)***	52.25(47.009)***

Table Notes: Total Agree¹ is the sum of 'agree' and 'strongly agree'. Differences in proportions are reported between the present study and the relevant prior work, and evaluated for statistical significance using the chi-square test of proportions. Degrees of freedom equals one for all chi-square values.

* p < .05 ** p < .01 *** p < .001

Table 6. Percentage of responses for each study: Supervisor Use of BWC data for administrative purposes

Response	Present Study	Katz et al	Gaub et al.	Smykla et al.	Prop _{diff(1)}	Prop _{diff(2)}	Prop _{diff(3)}
	% (n)	% (n)	% (n)	% (n)	% (X ²)		

Supervisor Use of Body-Worn Camera Data for Administrative Purposes:

Question 22: Used by supervisors to conduct arbitrary compliance reviews.

Strongly agree	13.2(1,316)					
Agree	28.49(1,316)	37.5(56)	19.83(358)			
Disagree	47.64(1,316)					
Strong disagree	9.65(1,316)					
Total Agree ¹	41.69	37.5	19.83		4.19(0.388)	21.86(57.651)***

Question 23: Regarded by supervisors as superior to data contained in departmental reports.

Strongly agree	29.85(1,314)			18(24)
Agree	36.32(1,314)	37.1(56)	39.6(358)	24(24)
Disagree	27.57(1,314)			

Strong disagree	6.09(1,314)						
Total Agree ¹	66.17	37.1	39.6	42	29.07(19.932)***	26.57(83.5)***	24.17(6.109)**

Question 24: Used by supervisors indiscriminately for disciplinary purposes.

Strongly agree	29.85(1,313)			8(24)		
Agree	36.32(1,313)			38(24)		
Disagree	27.57(1,313)					
Strong disagree	6.24(1,313)					
Total Agree ¹	66.17			46		20.17(4.258)*

Table Notes: Total Agree¹ is the sum of 'agree' and 'strongly agree'. Differences in proportions are reported between the present study and the relevant prior work, and evaluated for statistical significance using the chi-square test of proportions. Degrees of freedom equals one for all chi-square values.

* p < .05 ** p < .01 *** p < .001

Table 7. Question Category 1: Published studies' similar questions, to the current study's questions, with 'agree' response percentages

Influencing Citizen Behavior: When a citizen (or citizens) knows that an MDPD officer is wearing an activated body-worn camera...

Question Source	Question	SA	A	Total Agree	n	% Total Agree
1. Current study	Citizens are more cooperative when asked questions	84	527	611	1,324	46.14
1. Katz et al. (2014)	BWCs result in citizens being more cooperative				56	25.7*
1. Gaub et al. (2016)	Citizens will be more cooperative				358	50.53*
2. Current study	Citizens are more compliant with officer verbal commands	50	512	562	1,320	42.57
3. Current study	Suspects are less likely to resist arrest	23	235	258	1,319	19.56

3. Katz et al. (2014)	Suspects are less likely to resist arrest				56	11.8*
3. Gaub et al. (2016)	Suspects are less likely to resist arrest				358	23.76*
4. Current study	Citizens are less verbally hostile towards officers	29	315	344	1,317	26.11
4. Katz et al. (2014)	People will be generally less aggressive				56	25.7*
4. Gaub et al. (2016)	People will be generally less aggressive				358	40.16*
5. Current study	Citizens are less physically hostile towards officers	23	312	344	1,318	26.10
5. Katz et al. (2014)	People will be generally less aggressive				56	25.7*
5. Gaub et al. (2016)	People will be generally less aggressive				358	40.16*

Table Note: * Only the percentage response rate is reported in the study.

Table 8. Question Category 2: Published studies' similar questions, to the current study's questions, with 'agree' response percentages

Influencing Officer Behavior: When a citizen (or citizens) knows that an MDPD officer is wearing an activated body-worn camera...

Question Source	Question	SA	A	Total Agree	n	% Total Agree
6. Current study	Are more likely to give citations instead of warnings	187	375	652	1,316	42.7
6. Katz et al. (2014)	Officers will be less likely to give warnings				56	37.5*
6. Gaub et al. (2016)	Officers will be less likely to give warnings				358	19.83*
7. Current study	Are less likely to engage in casual encounters	340	511	851	1,314	64.76
7. Katz et al. (2014)	Officers will have few contacts, with citizens, because of BWCs				56	37.1*
7. Gaub et al. (2016)	Officers will have fewer contacts with citizens				358	39.6*
7. Smykla et al. (2015)	Wearing body-worn cameras would make my officers less likely to engage in proactive policing	18*	20*	38*	24	38*

8. Current study	Use less discretion during official law enforcement matters	392	477	869	1,313	66.18
8. Katz et al. (2014)	Officers will feel like they have less discretion				56	80.13*
8. Gaub et al. (2016)	Officers will feel like they have less discretion				358	64.7*
9. Current study	Are more cautious in decision-making during official law enforcement matters	364	655	1,019	1,309	77.84
9. Katz et al. (2014)	Officers will be more cautious in making decisions				56	64.88*
9. Gaub et al. (2016)	Officers will be more cautious in making decisions				358	66.16*
10. Current study	Are more likely to follow departmental procedures	272	719	991	1,309	75.70
10. Katz et al. (2014)	Officers will act more professional				56	39.55*
10. Gaub et al. (2016)	Officers will act more professional				358	55.96*
11. Current study	Have hesitated in elevating the use of force	511	468	979	1,308	74.85
11. Katz et al. (2014)	Affects an officer's decision to use force				56	58.73*
11. Gaub et al. (2016)	Affects an officer's decision to use force				358	55.8*
11. Smykla et al. (2015)	Wearing a body-worn camera would make the officers in my department more reluctant to use necessary force in encounters with citizens	4*	25*		24	29*

Table Note: * Only the percentage response rate is reported in the study.

Table 9. Question Category 3: Published studies' similar questions, to the current study's questions, with 'agree' response percentages

Completing Paperwork: When body-worn cameras are used at the MDPD,

Question Source	Question	SA	A	Total Agree	n	% Total Agree
12. Current study	Officers spend less time filling out paperwork	22	110	132	1,308	10
12. Katz et al. (2014)	Officers spend less time completing paperwork				56	2.9*
12. Gaub et al. (2016)	Officers spend less time completing paperwork				358	8.93*
13. Current study	Officers have more accurate incident accounts	135	794	929	1,306	71.13
13. Katz et al. (2014)	BWCs provide a more accurate account of an incident				56	58.8*
13. Gaub et al. (2016)	BWCs produce accurate accounts of incidents				358	79*
14. Current study	Data assists officers in completing paperwork	156	767	923	1,306	70.67
15. Current study	Officers rely more on data, than their memories, to complete paperwork	88	470	558	1,305	42.75

Table Note: * Only the percentage response rate is reported in the study.

Table 10. Question Category 4: Published studies' similar questions, to the current study's questions, with 'agree' response percentages

Comfort and Ease of Use: When an officer at the MDPD uses a body-worn camera...

Question Source	Question	SA	A	Total Agree	n	% Total Agree
16. Current study	It is easy to retrieve data for a specific incident	147	809	956	1,305	73.25
16. Katz et al. (2014)	Easy to locate and retrieve a video for a specific event				56	26.5*
16. Gaub et al. (2016)	Easy to locate and retrieve a video for a specific event				358	48.73*
17. Current study	The equipment is easy to use	172	878	1,050	1,303	80.58
17. Katz et al. (2014)	The camera is easy to use				56	61.8*
17. Gaub et al. (2016)	Equipment is easy to use				358	39*
18. Current study	The equipment is comfortable to wear	65	535	600	1,304	46.01
18. Katz et al. (2014)	The camera is comfortable to wear				56	57.6*
18. Gaub et al. (2016)	The equipment is comfortable to wear				358	29.56*
19. Current study	It is easy to assign data into categories	101	846	947	1,304	72.62
20. Current study	It is easy to tag and label data segments of evidentiary value	91	843	934	1,303	71.68
21. Current study	It is easy to upload data.	121	867	988	1,304	75.76
21. Katz et al. (2014)	It is easy to download at the end of the shift				56	23.5*
21. Gaub et al. (2016)	Easy to download at the end of shift				358	24.16*

Table Note: * Only the percentage response rate is reported in the study.

Table 11. Question Category 5: Published studies' similar questions, to the current study's questions, with 'agree' response percentages

Supervisor Use of Body-Worn Camera Data for Administrative Purposes: At the MDPD, the data obtained from a body-worn camera is...

Question Source	Question	SA	A	Total Agree	n	% Total Agree
22. Current study	Used by supervisors to conduct arbitrary compliance reviews	254	774	1,028	1,304	78.83
23. Current study	Regarded by supervisors as superior to data contained in departmental reports	202	741	943	1,303	78.83
24. Current study	Used by supervisors indiscriminately for disciplinary purposes	288	506	794	1,302	60.98
24. Smykla et al. (2015)	Body-worn cameras could be used by supervisors to 'fish' for evidence used to discipline officers	8*	38*		24	46*

Table Note: * Only the percentage response rate is reported in the study.

Chapter 5: Discussion

Introduction

The goal of the current study was to measure MDPD officer BWC perceptions post deployment. The MDPD internally administered the electronic survey from February 12, 2019, to March 1, 2019. 3,313 officers were eligible to participate and 1,410 participated (43% response rate). Of the respondents that chose to participate in answering the demographic questions, 1,084 were male and 273 were female. 281 identified as white, 762 as Hispanic, and 243 as African-American/black, and 69 as other. Participants averaged 3.6 years of employment at the MDPD, averaged 2.6 years using a BWC, and averaged 14.5 years policing without a BWC. Demographics are further discussed in the limitations section.

Participants were asked to respond to each question using a four-point Likert Scale (Strongly Agree, Agree, Disagree, Strongly Disagree). A 'neutral' option was not included per the AL's verbal implication; the MDPD impliedly sought definitive, not neutral, responses to the survey questions. The 24 questions were organized into the following five categories: Influencing Citizen Behavior, Influencing Officer Behavior, Completing Paperwork, Comfort and Ease of Use, and Supervisor Use of Body-Worn Camera Data for Administrative Purposes. The 'agree' responses (which includes Strongly Agree and Agree) are discussed for the questions that are similar to published study questions.

The 'agree' responses were reported for comparison to published study purposes. Three published studies used a Likert Scale and reported the 'agree' responses. This allowed for the current study's results to be compared to three published study results.

The differences in proportions (utilizing a chi-square test of proportions), comparing the current study's question results to each published study's question results, were presented in tables 2 - 6. In addition, the published studies' similar questions, and the current study's questions they are relevant to, were presented in tables 7 - 11.

Summary of Findings

The MDPD survey results indicate that BWCs (a) do not influence citizen behavior; (b) influence officer behavior; (c) officers perceive BWC data positively, yet not the paperwork it generates; (d) officers generally perceive BWC ease of use positively, yet the cameras are not comfortable to wear; (e) that officers negatively perceive the supervisor use of BWC data for administrative purposes.

Tables 2 through 6 provided the agree percent responses for the current study and the three published studies; the difference in proportions (chi-square test of proportions) was calculated between the current study and the three published studies. There were 17 questions where $p > .0.005$, so the null hypothesis was rejected i.e. there was a significant difference with respect to the proportion of respondents who agree to the questions between the published study and the current study. The hypothesized explanation, for the difference in proportions for each question, is further discussed below.

Interpretation of Findings

Influencing Citizen Behavior.

Question 1: Citizens are more cooperative when asked questions.

46.14% agreed that citizens are more cooperative when asked questions. Gaub et al.'s (2016) similar question reported a 50.53% agree response. Katz et al.'s (2014) similar question reported a 25.7% agree response. A chi-square test of proportions was

performed to examine the proportional difference, between similar questions, for the current study and each of the two published studies. The difference between the current study and the Katz et al. (2014) study was significant $X^2(9.052, N = 56) = 20.44, p < .01$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (25.7%) and the current study (46.14%). This may be attributable to the six-year period between the studies; Katz et al.'s (2014) survey was distributed in 2013 and the current study's survey was distributed in 2019.

The public did not largely call for police to use BWCs until after the Michael Brown shooting death in 2014. It was in the wake of this event when law enforcement agencies began to deploy BWCs en masse. Gaub et al.'s (2016) survey was distributed in late 2015 and had a similar agree response as the current study. MDPD officers interact with citizens who have been aware of BWC deployment and use for some time; citizens might be more cooperative because they are cognitive of the BWCs presence, whereas BWCs were not a large part of policing culture in 2013.

Questions 4 & 5: Citizens are less verbally (4) / physically (5) hostile towards officers.

26.11% agreed that citizens are less verbally hostile towards officers (question four) and 26.10% agreed that citizens are less physically hostile towards officers (question 5). Katz et al. (2014) and Gaub et al. (2016) used the same question, 'People will be generally less aggressive' in their respective surveys. Katz et al.'s (2014) similar question reported a 25.7% agree response while Gaub et al.'s (2016) similar question reported a 40.16% agree response.

A chi-square test of proportions was performed (both questions), to examine the proportional difference, between similar questions, for the current study and each of the two published studies. The difference between the current study and the Gaub et al. (2016) study was significant for question four: $X^2 (26.909, N = 358) = 14.05, p < .001$; and for question five: $X^2 (26.957, N = 358) = 14.06, p < .001$. There is a significant difference, for both questions, with respect to the proportion of respondents who agreed to the question between the published study (40.16%) and the current study (26.11%). This might be attributable to the population size differences between the studies.

Gaub et al.'s (2016) study had 56 responses to this question, whereas the current study had 1,317 (question four) and 1,318 (question five). The former may have experienced less citizen aggressiveness because of where and what time of day the respondents patrolled. The current study's response rate was a robust 43% of all sworn MDPD officers participating, so the respondents represented a wide range of patrol shifts and duties. It could also be possible that Phoenix citizens were less aggressive than Miami-Dade County citizens.

Influencing Officer Behavior.

Question 6: [Officers] are more likely to give citations instead of warnings.

42.7% agreed that officers are more likely to give citations instead of warnings. Katz et al.'s (2014) similar question reported a 37.5% agree response while Gaub et al.'s (2016) similar question reported a 19.83% agree response. A chi-square test of proportions was performed, to examine the proportional difference, between similar questions, for the current study and each of the two published studies. The difference between the current study and the Gaub et al. (2016) study was significant $X^2 (57.651, N$

= 358) = 21.86, $p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (19.83%) and the current study (42.7%). This may be attributable to the population size differences, between the two studies, as outlined in Questions 4 and 5. It may also be attributable to the length of time that the respondents used a BWC. Gaub et al. (2016) distributed the survey two to four weeks post BWC deployment; the average current study's respondent had used a BWC for 2.6 years. The current study's population responded based on long-term BWC use whereas Gaub et al.'s (2016) study population responded based upon short-term BWC use.

Question 7: [Officers] are less likely to engage in casual encounters.

64.76% agreed that officers are less likely to engage in casual encounters. Katz et al.'s (2014) similar question reported a 37.1% agree response; Gaub et al.'s (2016) similar question reported a 39.6% agree response; and Smykla et al.'s (2015) similar question reported a 38% agree response. A chi-square test of proportions was performed, to examine the proportional difference, between similar questions, for the current study and each of the three published studies. The difference between the current study and the Katz et al. (2014) study was significant $X^2 (19.932, N = 56) = 29.07, p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (37.1%) and the current study (66.17%). The difference between the current study and the Gaub et al. (2016) study was significant $X^2 (83.050, N = 358) = 26.57, p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (39.6%) and the current study (66.17%). The difference between the current study and the

Smykla et al. (2015) study was significant $X^2 (8.289, N = 24) = 28.17, p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (38%) and the current study (66.17%).

The current study's agree response percentage is the anomaly when compared to the Katz et al. (2014) and Gaub et al. (2016) studies which have similar agree response percentages. Smykla et al.'s (2015) study respondents were police commanders who responded as representatives of their respective law enforcement agencies, so the time period in which a BWC was used was not reported. The current study's respondents have been using a BWC, on average, for 2.6 years. Gaub et al.'s (2016) survey was distributed two to four weeks after BWC deployment and Katz et al.'s (2014) survey was distributed up to four months post BWC deployment. These are relatively short amounts of time for an officer to draw general conclusions, whereas the current study's 2.6 average years of use is an adequate amount of time to draw general conclusions.

Question 8: [Officers] use less discretion during official law enforcement matters.

66.18% agreed that officers use less discretion during official law enforcement matters. Katz et al.'s (2014) similar question reported an 80.13% agree response and Gaub et al.'s (2016) similar question reported a 64.7% agree response. A chi-square test of proportions was performed, to examine the proportional difference, between similar questions, for the current study and each of the two published studies. The difference between the current study and the Katz et al. (2014) study was significant $X^2 (4.712, N = 56) = 13.96, p < .05$; there is a significant difference with respect to the proportion of

respondents who agreed to the question between the published study (80.13%) and the current study (66.17%).

This difference could be attributable to the amount of time each study's respondents used a BWC. The current study's respondents have been using a BWC, on average, for 2.6 years. Katz et al.'s (2014) survey was distributed up to four months post BWC deployment. Officers may have initially felt 'stifled' i.e. less discretion because the BWC was a new technology and they did not know how the data would be evaluated by supervisors. The current study's respondents had an average of 2.6 years using a BWC, so they had time to adapt the technology and learn (through experience) how data would be evaluated by supervisors.

Question 9: [Officers] are more cautious in decision-making during official law enforcement matters.

78.33% agreed that officers are more cautious in decision-making during official law enforcement matters. Katz et al.'s (2014) similar question reported a 64.88% agree response while Gaub et al.'s (2016) similar question reported a 66.16% agree response. A chi-square test of proportions was performed, to examine the proportional difference, between similar questions, for the current study and each of the two published studies. The difference between the current study and the Katz et al. (2014) study was significant $X^2(5.617, N = 56) = 13.45, p < .05$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (64.88%) and the current study (78.33%). The difference between the current study and the Gaub et al. (2016) study was significant $X^2(22.631, N = 358) = 12.17, p < .001$; there

is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (66.16%) and the current study (78.33%).

This is likely attributable to the differences in how much time the respondents in each study used a BWC: 2.6 years, average, in the current study, four months for Katz et al.'s (2014) study, and two to four weeks in Gaub et al.'s (2016) study. The current study's population responded based on long-term BWC use whereas the Gaub et al. (2016) and the Katz et al. (2014) study populations responded based upon short-term BWC use.

Question 10: [Officers] are more likely to follow departmental procedures.

75.69% agreed that officers are more likely to follow departmental procedures. Katz et al.'s (2014) similar question reported a 39.55% agree response while Gaub et al.'s (2016) similar question reported a 55.96% agree response. A chi-square test of proportions was performed, to examine the proportional difference, between similar questions, for the current study and each of the two published studies. The difference between the current study and the Katz et al. (2014) study was significant $X^2 (36.619, N = 56) = 36.14, p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (39.55%) and the current study (75.69%). The difference between the current study and the Gaub et al. (2016) study was significant $X^2 (53.616, N = 358) = 19.73, p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (55.96%) and the current study (75.69%).

This is likely attributable to the differences in how much time the respondents in each study used a BWC: 2.6 years, average, in the current study; four months for Katz et al.'s (2014) study; and two to four weeks for Gaub et al.'s (2016) study. The current

study's population responded based on long-term BWC use whereas the Gaub et al. (2016) and the Katz et al. (2014) study populations responded based upon short-term BWC use.

Question 11: [Officers] have hesitated in elevating the use of force.

25.41% agreed that officers have hesitated in elevating the use of force. Katz et al.'s (2014) similar question reported a 58.73% agree response and Gaub et al.'s (2016) similar question reported a 55.8% agree response. A chi-square test of proportions was performed, to examine the proportional difference, between similar questions, for the current study and each of the three published studies. The difference between the current study and the Katz et al. (2014) study was significant $X^2 (30.385, N = 56) = 33.32, p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (58.73%) and the current study (25.41%). The difference between the current study and the Gaub et al. (2016) study was significant $X^2 (119.340, N = 358) = 30.39, p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (55.8%) and the current study (25.41%).

This is likely attributable to the differences in how much time the respondents in each study used a BWC: 2.6 years, average, in the current study; four months for Katz et al.'s (2014) study; and two to four weeks for Gaub et al.'s (2016) study. The two studies' respondents wore a BWC for two weeks to four months. It is likely that these respondents, as recent adopters of BWC use, questioned their elevation in the use of force because they were newly-wearing a BWC. The current study's respondents had an average of 2.6 years of BWC use, so they were far more comfortable with the technology

and learned (from experience) how supervisors evaluate BWC data. The current study's population responded based on long-term BWC use whereas the Gaub et al. (2016) and the Katz et al. (2014) study populations responded based upon short-term BWC use.

It could be argued that the BWC serves as a form of passive oversight; three-quarters agreed that officers are more likely to follow departmental procedures and two-thirds agreed that officers use less discretion during official law enforcement matters. If the administration's intent is for officers to follow departmental procedures, then BWCs are serving this purpose. However, the perception that officers are more cautious in decision-making during official law enforcement matters, and hesitate in elevating the use of force, could have negative outcomes.

'Deadly hesitation' is when an officer hesitates, in the use of force, because of fear of post-incident media narration. In August of 2015, a Birmingham, Alabama police detective was pistol-whipped unconscious (with his own firearm). He stated that he hesitated in using force, "...because he didn't want to be accused of needlessly killing an unarmed man" (Valencia, 2015, para. 1). In October of 2016, a Chicago officer was hospitalized after she was severely beaten; she was afraid to use her firearm for fear of post-incident scrutiny. Chicago Police Superintendent Eddie Johnson said,

She thought she was going to die. She knew that she should shoot this guy, but she chose not to, because she didn't want her family or the department to have to go through the scrutiny the next day on national news ("Chicago police officer", 2016, para. 4).

This may explain why 64.76% of officers agreed that they are less likely to engage in casual encounters. Every casual encounter requires some level of officer discretion, and

officers perceive that they have less discretion, are more cautious in decision-making, and hesitate in elevating the use of force. Reducing casual encounters negates the appurtenant policing practices.

Completing Paperwork.

Question 13: Officers have more accurate incident accounts.

71.12% agreed that officers have more accurate incident accounts. Katz et al.'s (2014) similar question reported a 58.8% agree response while Gaub et al.'s (2016) similar question reported a 79% agree response. A chi-square test of proportions was performed, to examine the proportional difference, between similar questions, for the current study and each of the two published studies. The difference between the current study and the Katz et al. (2014) study was significant $X^2 (3.925, N = 56) = 12.32, p < .05$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (55.8%) and the current study (71.12%). The difference between the current study and the Gaub et al. (2016) study was significant $X^2 (8.809, N = 358) = 7.88, p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (79%) and the current study (71.12%).

This could be attributable to the BWC model used during deployment. The Katz et al. (2014) study used the VIEVU camera system, the Gaub et al. (2016) used Taser Axon BWC systems, and the current study (2019) used the VIEVU camera system. BWC technology has greatly improved since the Katz et al. (2014) study, conducted in 2013, in regard to video quality and clarity. The VIEVU camera system has been updated many times since the Katz et al. (2013) study, so this is likely attributable to the higher agree

percentage response in the current study (for the same BWC system). However, the Gaub et al. (2016) study reported a higher agree response percentage (79%) than the current study (71.12%), yet the studies used different BWCs. This difference could be attributable to Axon producing a superior BWC regarding video quality and clarity.

Comfort and Ease of Use

Question 16: It is easy to retrieve data for a specific incident.

73.25% agreed that it is easy to retrieve data for a specific incident. Katz et al.'s (2014) similar question reported a 26.5% agree response while Gaub et al.'s (2016) similar question reported a 48.73% agree response. A chi-square test of proportions was performed, to examine the proportional difference, between similar questions, for the current study and each of the two published studies. The difference between the current study and the Katz et al. (2014) study was significant $X^2 (57.339, N = 56) = 46.75, p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (26.5%) and the current study (73.25%). The difference between the current study and the Gaub et al. (2016) study was significant $X^2 (77.539, N = 358) = 24.52, p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (48.73%) and the current study (73.25%).

This is likely attributable to the BWC model used during deployment. The Katz et al. (2014) used the VIEVU camera system, the Gaub et al. (2016) used Taser Axon BWC systems, and the current study (2019) used the VIEVU camera system. BWC technology has greatly improved since the Katz et al. (2014) study conducted in 2013. The current

study's respondents likely reported a higher agree response percentage because the appurtenant BWC software is more user-friendly (and intuitive) than previous versions.

Question 17: The equipment is easy to use.

80.58% agreed that the equipment is easy to use. Katz et al.'s (2014) similar question reported a 61.8% agree response while Gaub et al.'s (2016) similar question reported a 39% agree response. A chi-square test of proportions was performed, to examine the proportional difference, between similar questions, for the current study and each of the two published studies. The difference between the current study and the Katz et al. (2014) study was significant $X^2(11.742, N = 56) = 18.78, p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (61.8%) and the current study (80.58%). The difference between the current study and the Gaub et al. (2016) study was significant $X^2(238.727, N = 358) = 41.58, p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (39%) and the current study (80.58%).

This could be attributable to the BWC model used during deployment. The Katz et al. (2014) used the VIEVU camera system, the Gaub et al. (2016) used Taser Axon BWC systems, and the current study (2019) used the VIEVU camera system. BWC ease of use has greatly improved since the Katz et al. (2014) study, conducted in 2013, and the Gaub et al. (2016) study conducted in 2016. The current study's respondents likely reported a higher agree response percentage because ease of use has improved (number of actions required to execute a command, software interface).

Question 18: The equipment is comfortable to wear.

46% agreed that the equipment is comfortable to wear. Gaub et al.'s (2016) same question reported a 29.56% agree response. A chi-square test of proportions was performed, to examine the proportional difference, between similar questions, for the current study and each of the two published studies. The difference between the current study and the Gaub et al. (2016) study was significant $X^2 (31.055, N = 358) = 16.44, p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (29.56%) and the current study (46%).

This could be attributable to the BWC model used during deployment. The Gaub et al. (2016) study used Taser Axon BWC systems and the current study (2019) used the VIEVU camera system. BWC comfort has improved since the Gaub et al. (2016); this is attributable to ergonomics studies. The current study's respondents likely reported a higher agree response percentage because BWCs have greatly reduced in size and camera placement options (on the uniform) have increased. The agree response percentage difference could also be attributable to each study using different BWC systems.

Question 21: Is it easy to upload data.

75.75% agreed that it is easy to upload data. Katz et al.'s (2014) used the same question and reported a 23.5% agree response while Gaub et al.'s (2016) same question reported a 24.16% agree response. A chi-square test of proportions was performed, to examine the proportional difference, between similar questions, for the current study and each of the two published studies. The difference between the current study and the Katz et al. (2014) study was significant $X^2 (75.385, N = 56) = 52.25, p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the

question between the published study (23.5%) and the current study (75.75%). The difference between the current study and the Gaub et al. (2016) study was significant $\chi^2(334.677, N = 358) = 52.25, p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (24.16%) and the current study (75.75%).

This is likely attributable to the BWC model used during deployment. The Katz et al. (2014) used the VIEVU camera system, the Gaub et al. (2016) used Taser Axon BWC systems, and the current study (2019) used the VIEVU camera system. BWC technology has greatly improved since the Katz et al. (2014) study conducted in 2013. The current study's respondents likely reported a higher agree response percentage because software technology has improved (more user-friendly, intuitive, etc.).

These findings indicate that officers greatly perceived BWC data tagging, retrieval, and uploading positively, yet close to half of the respondents did not find the equipment comfortable to wear. This is something that MDPD administration may seek to address because, if the camera system is uncomfortable to wear, it might interfere with routine police practices and procedures.

Supervisor Use of Body-Worn Camera Data for Administrative Purposes

Questions 22, 23, and 24 were crafted to provide a precise measurement of officer perceptions; this was achieved by using department-specific language (found in the MDPD Memo) for question conciseness.

Question 22: [data obtained is] Used by supervisors indiscriminately for disciplinary purposes.

The MDPD Memo states, "Supervisors will not conduct arbitrary compliance reviews" (Perez, 2016, p. 6). 41.69% of officers agreed that data is used by supervisors to conduct arbitrary compliance reviews. Gaub et al.'s (2016) similar question reported a 19.83% agree response. A chi-square test of proportions was performed, to examine the proportional difference, between similar questions, for the current study and each of the two published studies. The difference between the current study and the Gaub et al. (2016) study was significant $X^2 (57.651, N = 358) = 21.86, p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (19.83%) and the current study (41.69%). This difference is likely attributable to officer perceptions of supervisors at different departments.

Question 23: [data obtained is] Regarded by supervisors as superior to data contained in departmental reports.

The MDPD Memo mandates that "Data recordings are intended to supplement departmental reports" (Perez, 2016, p. 8). 66.17% of officers agreed that data is regarded by supervisors as superior to data contained in departmental records. Katz et al.'s (2014) used a similar question and reported a 37.1% agree response; Gaub et al.'s (2016) similar question reported a 39.6% agree response; and Smykla et al.'s (2015) similar question reported a 42% agree response.

A chi-square test of proportions was performed, to examine the proportional difference, between similar questions, for the current study and each of the three published studies. The difference between the current study and the Katz et al. (2014) study was significant $X^2 (19.932, N = 56) = 29.07, p < .001$; there is a significant difference with respect to the proportion of respondents who agreed to the question

between the published study (37.1%) and the current study (66.17%). The difference between the current study and the Gaub et al. (2016) study was significant $X^2 (83.050, N = 358) = 26.57, p <.001$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (39.6%) and the current study (66.17%). The difference between the current study and the Smykla et al. (2015) study was significant $X^2 (6.109, N = 24) = 24.17, p <.01$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (42%) and the current study (66.17%).

These differences are likely attributable to officer perceptions of supervisors at different departments. It is to be noted that the Smykla et al. (2015) study consisted of respondents who were police commanders, so the 42% agree response was the perception of the commanders, not patrol officers. Finally, the current study's officer perceptions could be accurate; supervisors may consider data superior to officer memory because the data is what the supervisor is accountable for; it is what could become the focus of a national news story.

Question 24: [data obtained is] Used by supervisors indiscriminately for disciplinary purposes.

The MDPD Memo states that, "BWC data will not be utilized indiscriminately for disciplinary purposes" (Perez, 2016, p. 7). 66.17% agreed that data is used by supervisors indiscriminately for disciplinary purposes. Smykla et al.'s (2015) similar questions reported a 46% agree response. A chi-square test of proportions was performed, to examine the proportional difference, between similar questions, for the current study and the published study. The difference between the current study and the Smykla et al.

(2015) study was significant $X^2 (4.258, N = 24) = 20.17, p < .05$; there is a significant difference with respect to the proportion of respondents who agreed to the question between the published study (46%) and the current study (66.17%). This difference is likely attributable to officer perceptions of supervisors at different departments. However, it is to be noted that the Smykla et al. (2015) study consisted of respondents who were police commanders, so the 46% agree response was the perception of the commanders, not patrol officers.

The differences among the studies, for Questions 22, 23, and 24, are attributable to different departmental policy, the consistency with which policies are followed, and how different law enforcement agencies have varied administrative cultures and practices; this results in how officers perceive administrative oversight. What is important, however, is how the current study's respondents largely perceived supervisor use of BWC camera data, for administrative purposes, as negative.

The responses to questions 22 and 24 could be evaluated by the MDPD. There is (obviously) a written procedure for supervisor review of subordinate officer data. This leaves a 'paper trail', so determining whether procedures were followed could be ascertained. Is it possible that many supervisors do not follow procedure and conduct arbitrary compliance reviews for disciplinary purposes...to a level where more than one-half of officers indicated such in their responses? The answer is likely 'no'. It is speculated that, if this were true and ongoing, that some form of internal check and balance would have identified and corrected the issue. Officers may hold this perception because they do not understand what the MDPD's definitions for 'arbitrary' and 'indiscriminately' are. They may perceive a supervisor's review of data as arbitrary and

indiscriminate when it is actually pursuant to procedure (or authority). Finally, it may be possible (though highly unlikely) that supervisors are conducting arbitrarily compliance reviews, indiscriminately, for disciplinary purposes.

Context of Findings

The current study is the first study where respondents policed for a department that implemented a BWC use requirement for patrol officers. The literature review discussed the published officer BWC perception studies and only four reported on officer BWC perceptions post deployment; none of the departments had mandatory BWC use.

Three of the published studies were quantitative and all respondents participated in a body-worn camera pilot program for two weeks to four months; these studies represent only those officers who participated in the BWC pilot program and are not generalizable to their respective departments. However, the current study's robust response rate (43%), in a population that had worked under a BWC use requirement policy for three years when data was collected, allows it to be generalizable to the MDPD officer population.

The current study's results were consistent with the themes found in officer BWC perception post deployment studies. They were (a) BWCs provide a more accurate account of incidents and improved the quality of evidence; (b) officers report that BWC technology features increased workload (download data, complete reports, etc.); (c) officers express concerns that the footage might be used against them; (d) officers use less discretion during official law enforcement matters; and (e) officers are more cautious in making decisions.

Implications of Findings

The current study's results are a strong representation of officer BWC perceptions post deployment because (a) the robust 43% response rate; (b) the respondents averaged 2.6 years using a BWC; and (c) the current study is the only study where respondents policed for a department that implemented a mandatory BWC use policy. Katz et al.'s (2014) study had 56 respondents, at the Phoenix Police Department, who completed the survey up to four months after BWC deployment. Gaub et al.'s (2016) study had 358 respondents, spanning three police departments, who completed the survey two to four weeks after BWC deployment. Neither study surveyed departments where there was required BWC use. Two weeks, to four months, is a relatively short time period for the BWC operator to become comfortable with the technology and to learn how supervisors will evaluate data i.e. the user's actions captured on video. The current study's respondents had enough time (2.6 years average) to become comfortable in using the technology and learning (through experience) how supervisors evaluate data. This is best illustrated by the respective agree response percentages for Question 11: [officers] Have hesitated in elevating the use of force.

Katz et al. (2014) reported a 58.73% agree response and Gaub et al. (2016) reported a 55.8% agree response. The respondents likely hesitated in elevating the use of force because they were acutely cognizant of the BWC. However, as respondents became comfortable with BWC use, they were likely not as acutely cognizant of its presence, which accounts for why the current study's respondents reported a 25.41% agree response.

The largely negative response to the last category, 'Supervisor Use of Body-Worn Camera Data for Administrative Purposes', was unexpected. Two-thirds of respondents

agreed that (a) supervisors regard video data as superior to data contained in departmental records; and (b) data is used by supervisors, indiscriminately, for disciplinary purposes.

The MDPD Memo mandates that "Data recordings are intended to supplement departmental reports" (Perez, 2016, p. 8). It further states, "BWC data will not be utilized indiscriminately for disciplinary purposes" (Perez, 2016, p. 7). Therefore, two-thirds of the current study's respondents agree that supervisors are in violation of MDPD administrative rules and regulations. This could be addressed by MDPD administration because it could be attributable to why there are officers who fail to activate their BWC when required to (by policy) or why data is not properly uploaded at the end of a shift. There are likely officers who forget to activate their BWC (officers are human, after all) and there could be technical, software, or user errors in uploading data at the end of a shift. However, with such a large, negative response to how officers perceive administrators using BWC data, there are likely a percentage of officers who are intentionally not activating their BWC, or uploading the data properly, at the end of a shift.

Limitations of the Study

The results are representative of the MDPD only; they are not generalizable to other law enforcement agencies. Studies have demonstrated that police behavior is unique and may not be similar to another law enforcement agency. "Accordingly, a police agency's and community's response to the implementation of BWC may be a reflection of the scope and nature of issues in that department and community" (Katz et al., 2014, p. 12).

Measuring bias and sampling error is not possible for surveys that are not based on probability. The relationship between the target population and the survey sample is immeasurable and the potential bias is unknowable. The current study utilized a survey that is not based on probability, so bias and sampling error cannot be measured. Furthermore, the current study did not seek to establish a causal relationship, so internal validity was not a factor.

Another limitation is the number of respondents who had never used a BWC. 27% of respondents (388) had never used a BWC. MDPD policy states that Lieutenants, and ranks higher than Lieutenant, are not required to wear BWCs. Many of these officers were administrators (or detectives, etc.) when the BWC program was implemented in 2016, and they have not returned to patrol duties since. The MDPD research policy is that electronic surveys must be facilitated internally by the IT department. Individual-level data was requested numerous times before the survey was administered, yet the IT department provided aggregate data; therefore, there was no method by which to extract those responses with no BWC experience. This is the same reason why the data cannot be cross-tabulated using the reported demographics.

There were no questions addressing whether citizens were aware that the officer was using a BWC. A final limitation is the (unintentional) implied assumption underlying the current study survey questions regarding BWC influence on citizens (first category): Respondents answered on the assumption that citizens knew that the officer was using a BWC. Respondents may have thought about this, or would like to have commented on this, yet there was not an option to do so.

Future Research Directions

It is recommended that future studies adopt the response model (four-point Likert scale reporting the 'agree' percentage response) and questions utilized in the current study. This is because (a) the current study's survey questions are a product of a lengthy Delphi Method; and (b) the future study results could be compared to the results reported in the current study. This would allow for further studies to evaluate why there are different results among departments.

It is further recommended that future studies partner with law enforcement agencies that have implemented a body-worn camera program; this is recommended so results could be generalizable to the population. However, it is important to control for respondents who have no experience policing with a body-worn camera; this would provide researcher confidence in knowing that the results reflect officer perceptions who have experience policing with a body-worn camera.

Future studies might address variables which would inform the citizen that the officer is using a BWC. This study's first category of questions were crafted with the assumption that the citizen, or citizens, knew that the officer was using a body-worn camera. Such studies could address if there is a visual cue informing the citizen that the officer is using a BWC, such as a blinking light; they might also address whether the officer verbally announced BWC use upon initial contact.

Finally, future studies could research BWC misconduct sanctions to compare to officer BWC use perceptions. Officer BWC post deployment perceptions hold that police administration uses BWC data indiscriminately for disciplinary purposes. Is this perception founded? The media, and the court of public opinion, would need to be disregarded; law enforcement agency BWC use sanctions (and disciplinary reports short

of sanction) could be researched to determine if such negative officer perceptions are founded in policing administration. A finding that police administration is not using the data indiscriminately, for disciplinary purposes, could mitigate potential negative officer BWC perceptions during the pre-deployment and implementation phases.

Summary

Law enforcement officers might be perceived as possessing a collective intuition in assessing pre and post deployment body-worn camera use because there were similar themes found in the pre deployment, impact, and post deployment studies spanning many states and law enforcement agencies. The officer BWC perception pre-deployment studies revealed that officers perceived BWCs as an excellent tool for documenting evidence, reviewing an incident for report writing, and increasing "by-the-book" behavior of other officers. However, officers perceive BWCs as a vehicle for police managers to impose increased liability on officer conduct and discretion.

The officer BWC impact studies partially reinforced officers' BWC perceptions pre-deployment; they are a good tool to document evidence and to review video footage for report writing. However, officers also report that BWC technology features increased workload (download data, complete reports, etc.) while expressing concerns that the footage might be used against them.

In the officer BWC perception post-deployment studies, the consistent themes were (a) BWCs provide a more accurate account of incidents and improved the quality of evidence; (b) officers report that BWC technology features increased workload (download data, complete reports, etc.); (c) officers express concerns that the footage

might be used against them; (d) officers use less discretion during official law enforcement matters; and (e) officers are more cautious in making decisions.

In summary, officers perceived BWC future use (pre deployment) as a good tool for documenting evidence and report writing. This was found in the impact studies, and the post deployment studies affirmed this projection by confirming that BWCs are, in fact, an excellent tool for documenting evidence and report writing. Surveyed officers expressed the same concern in the pre deployment, impact, and post deployment studies- that video footage might be used against them in court or by police administration. The current study found that this concern is well-founded because two-thirds, of MDPD officers, agree that the video footage is used against them in two manners; (a) supervisors regard video footage as superior to officer accounts; and (b) video footage is used indiscriminately, by supervisors, for disciplinary purposes. This is likely attributable to why officers report that they use less discretion during official law enforcement matters and that they are more cautious in making decisions; this could be interpreted as officers following more 'by the book behavior' because they fear that the discretion employed (or decision made) could later be used against them. Finally, the impact and post deployment studies found that BWC technology increased officer work load.

What does this mean for stakeholders? This depends on the stakeholder's role. police administration stakeholders could confidently inform officers that BWCs are useful for documenting evidence and report writing. Data 'speaks for itself' i.e. it disposes of the subjective nature, and poor memory, of human beings. BWC data has disposed of numerous complaints, filed against officers, once the data was reviewed. However, police administration should be advised that officers perceive BWC technology, which

exonerates them from spurious complaints, is a tool used by administrators to discipline officers indiscriminately.

Police administration stakeholders are further advised to conduct focus groups to discover what BWC perceptions officers have of use, administration, and policy. This is recommended because the reviewed law enforcement agency BWC program policies are comprehensive in scope, practice, and procedure. Therefore, there exists a gap between how officers perceive administrators indiscriminately using data, for disciplinary purposes, and the agency's policy- where every reviewed policy expressly prohibits this abuse of authority. There is no research to support that officers' positive perception, of the administrative use of BWC data, is correlated with fewer incidents of officers not activating BWCs...yet it is cautiously projected that officers positively perceiving the administrative use of data could result in fewer BWC non-activation incidents.

Law enforcement officer stakeholders are advised to fully understand their agency's BWC program policy and to ask questions to the appropriate supervisor or administrator. There could be a gap between how the officer understands the policy and how the administration applies the policy; communication is paramount. The stakeholder is encouraged to raise concerns if there exists a founded perception that their agency's BWC program policy is not being followed by supervisors. Understand that police administration has a strong, vested interest in officers following BWC program policy because, if an officer does not follow policy, then police administration is held accountable in the court of public opinion. Police administrators, like officers, both desire strong community-police relations and media reports that erode such relations negatively affect every community and police stakeholder.

References

- ABC 7 Eyewitness News. (2016, October 6). *Chicago police officer says she feared using gun while being beaten*. Retrieved from <https://abc7chicago.com/chicago-cop-says-she-feared-using-gun-while-being-beaten/1543015/>
- Alcorn, C. (2016, July 6). *Police camera business is booming in wake of Dallas shootings*. Retrieved from <http://fortune.com/2016/07/09/police-body-cameras-dallas-shootings/>
- Ariel, B. (2017). Police body cameras in large police departments. *The Journal of Criminal Law & Criminology*, 106(4), 729-768. Retrieved from Academic Search Premier.
- Ariel, B., Farrar, W., & Sutherland, A. (2015). The effect of police body-worn cameras on use of force and citizen complaints against the police: A randomized controlled trial. *Journal of Quantitative Criminology*, 31(3), 509-535. doi: 10.1007/s10940-014-9236-3
- Baxter, B., & Jack, S. (2014). Qualitative case study methodology: Study design and deployment for novice researchers. *The Qualitative Report*, 13(4), 544-559. Retrieved from https://www.researchgate.net/publication/228621600_Qualitative_Case_Study_Methodology_Study_Design_and_Deployment_for_Novice_Researchers
- Beebe, A., & Masterson, J. (2015). *Communicating in small groups: Principles and practices* (11th ed.). Boston, MA: Pearson
- Connolly, D. (2018, September 26). *MPD releases names of officer involved in Martavious Banks shooting*. Retrieved from <https://www.commercialappeal.com/story/news/crime/2018/09/26/mpd-releases-names-officers-martavious-banks-shooting/1433862002/>
- Creative Research Systems. (2012). *Sample size calculator*. Retrieved from <https://www.surveysystem.com/sscalc.htm>
- Creswell, J. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: Sage
- Gaub, J., Choate, D., Todak, N., Katz, C., & White, M. (2016). Officer perceptions of body-worn cameras before and after deployment: A study of three departments. *Police Quarterly*, 19(3), 275-302. Retrieved from <http://journals.sagepub.com/doi/pdf/10.1177/1098611116653398>
- Gaub, J., Todak, J., & White, M. (2017). Beyond patrol: Exploring the perceptions of police body-worn cameras among officers in specialized units. *Arizona Center for*

Violence Prevention and Community Safety, Arizona State University. Retrieved from <https://www.bja.gov/bwc/pdfs/specialty-unit-report-final-2-17.pdf>

- Gaub, J., White, M., Padilla, K., & Katz, C. (2017). Implementing a police worn body camera program in a small agency. *Arizona Center for Violence Prevention and Community Safety*, Arizona State University. Retrieved from <https://www.bwctta.com/sites/default/files/Files/Resources/SAS%20Draft%20Technical%20Report%2010-17%20-%20FINAL.pdf>
- Gramaglia, J. (2016). Police officers' perceptions of body-worn cameras in the Buffalo and Rochester Police Departments. *Public Administration Master's Projects*, 20. Retrieved from <https://link.springer.com/article/10.1007/s12103-017-9403-9>
- Hedberg, E., Katz, C., & Choate, D. (2016). Body-worn cameras and citizen interaction with police officers: Estimating plausible effects given varying compliance levels. *Justice Quarterly*, 34(4), 627-651. doi: <https://doi.org/10.1080/07418825.2016.1198825>
- Hyatt, J., Mitchell, R., & Ariel, B. (2017). The effects of a mandatory body-worn camera policy on officer perceptions of accountability, oversight, and departmental culture. *Villanova Law Review*, 62(5), 1005-1035. Retrieved from Complementary Index.
- Iannelli, J. (2018, June 27). Miami cops keep refusing to use their body cameras, oversight panel warns. *Miami New Times*. Retrieved from <https://www.miaminewtimes.com/news/miami-cops-still-not-wearing-body-cameras-civilian-investigative-panel-says-10476306>
- Katz, C., Choate, D., Ready, J., & Nuno, L. (2014). Evaluating the impact of officer worn body cameras in the Phoenix Police Department. *Arizona Center for Violence Prevention and Community Safety*, Arizona State University. Retrieved from https://publicservice.asu.edu/sites/default/files/ppd_spi_feb_20_2015_final.pdf
- Jennings, W., Fridell, L., & Lynch, M. (2014). Cops and cameras: Officer perceptions of the use of body-worn cameras in law enforcement. *Journal of Criminal Justice*, 42(6), 549-556. Retrieved from Retrieved from <https://www.sciencedirect.com/science/article/pii/S0047235214000853>
- Justice & Security Strategies, Inc. (n.d.). *Dr. Craig Uchida*. Retrieved from <http://www.jssinc.org/about/dr-craig-uchida/>
- Levenson, E. (2017, July 19). *Minneapolis police shooting exposes flaws of body cameras*. Retrieved from <https://www.cnn.com/2017/07/19/us/minneapolis-police-shooting-body-camera/index.html>

- Lowery, W. (2016, September 26). Charlotte officer did not activate body cameras until after Keith Scott had been shot. *The Washington Post*. Retrieved from https://www.washingtonpost.com/news/post-nation/wp/2016/09/26/charlotte-officer-did-not-activate-body-camera-until-after-keith-scott-had-been-shot-2/?noredirect=on&utm_term=.54d9f0f72e04
- Macari, J. (2015, April). *Body-worn cameras: Concerns and considerations*. Retrieved from https://www.bja.gov/bwc/pdfs/North-Carolina-District-Attorneys_Best-Practices_Committee_Body-Worn-Cameras-Concerns-and-Considerations.pdf
- McCarthy, T. (2015, March 18). The uncounted: Why the US can't keep track of people killed by police. *The Guardian*. Retrieved from <https://www.theguardian.com/us-news/2015/mar/18/police-killings-government-data-count>
- Miami-Dade County. (2018). *Miami-Dade Police Department*. Retrieved from <https://www8.miamidade.gov/global/police/home.page#>
- Miller, L., & Toliver, J., P.E.R.F. U.S. Department of Justice, Office of Community Oriented Policing Services. (2014). *Implementing a body-worn camera program: Recommendations and lessons learned*. Retrieved from <https://www.justice.gov/iso/opa/resources/472014912134715246869.pdf>
- National Conference of State Legislators. (2017, October 27). *Body-worn camera laws database*. Retrieved from <http://www.ncsl.org/research/civil-and-criminal-justice/body-worn-cameras-interactive-graphic.aspx>
- Orlikowski, W., & Gash, D. (1994). Technological frames: making sense of information technology in organizations. *ACM Transactions on Information Systems (TOIS)*, 12(2), 174–207. doi: 10.1145/196734.196745
- Perez, J. Miami-Dade County Memorandum. (2016, April 20). *Revision to the departmental manual, new policy, chapter 33 - part 1 - body-worn camera system*. Retrieved from <https://www.miamidade.gov/police/library/bwc-policy.pdf>
- Pickler, N. (2014, December 1). *Obama wants more cops wearing body cams*. Retrieved from <https://www.policeone.com/police-products/body-cameras/articles/7910646-Obama-wants-more-cops-wearing-body-cams/>
- Ramirez, E. (2014). *A report on body worn cameras*. Retrieved from https://www.bja.gov/bwc/pdfs/14-005_Report_BODY_WORN_CAMERAS.pdf
- Ready, J., & Young, J. (2015). The impact of on-officer video cameras on police-citizen contacts: findings from a controlled experiment in Mesa, AZ. *Journal of Experimental Criminology*, 11(3), 445-458. doi: 10.1007/s11292-015-9237-8

- Sanburn, J. (2014, November 26). The one battle Michael Brown's family will win. *Time*. Retrieved from <http://time.com/3606376/police-cameras-ferguson-evidence/>
- Smykla, J., Crow, M., Crichlow, V., & Snyder, J. (2015). Police body-worn cameras: Perceptions of law enforcement leadership. *American Journal of Criminal Justice*, 41(3), 424-443. doi: 10.1007/s12103-015-9316-4
- Sweeney, A., & Gorner, J. (2016, August 2). Chicago police: Body camera didn't record cop's fatal shooting of teen in back. *Chicago Tribune*. Retrieved from <https://www.chicagotribune.com/news/local/breaking/ct-chicago-police-shooting-eddie-johnson-met-20160801-story.html>
- Timberg, C. (2017, March 20). A cop fires. A teen dies. Yet six police body cameras somehow miss what happens. *The Washington Post*. Retrieved from https://www.washingtonpost.com/business/technology/a-cop-fires-a-teen-dies-yet-six-police-body-cameras-somehow-miss-what-happens/2017/03/20/c7d801a8-0824-11e7-b77c-0047d15a24e0_story.html?utm_term=.e6035094ad73
- Uchida, C., Solomon, S., Connor, C., & Shutinya, M. (2016). *Evaluating Body Worn Video Cameras in the LAPD: Findings from Officer Surveys (Wave 1)*. Justice & Security Strategies. Silver Springs, MD.
- United States Department of Justice, Bureau of Justice Affairs. (2018). *Body-worn camera toolkit*. Retrieved from <https://www.bja.gov/bwc/>
- U.S. Department of Justice, Office of Community Oriented Policing Services. (2014). *Implementing a body-worn camera program: Recommendations and lessons learned*. Retrieved from http://www.policeforum.org/assets/docs/Free_Online_Documents/Technology/implementing%20a%20body-worn%20camera%20program.pdf
- U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Assistance (2015). *Body-worn camera program fact sheet*. Retrieved from <https://www.bja.gov/bwc/pdfs/BWCPIP-Award-Fact-Sheet.pdf>
- Valencia, N. (2015, August 14). *Pistol-whipped detective says he didn't shoot attacker because of headlines*. Retrieved from <https://www.cnn.com/2015/08/13/us/alabama-birmingham-police-detective-pistol-whipped/index.html>
- White, M. U.S. Department of Justice, Office of Community Oriented Policing Services. (2014). *Police officer body-worn cameras: Assessing the evidence*. Retrieved from https://www.bja.gov/bwc/pdfs/DiagnosticCenter_PoliceOfficerBody-WornCameras.pdf

Zea, N. (2016, April 28). *Miami-Dade Police Dept. launches body camera programs.*
Retrieved from <https://miami.cbslocal.com/2016/04/28/miami-dade-police-dept-launches-body-camera-program/>

Survey Instrument

Police officers' perceptions towards the use of body-worn cameras questionnaire.

Purpose of Study

The purpose of this study is to learn your opinions about body-worn cameras in the police work that you do.

Demographics

Sex: male/female

Race (select all which apply): White, Hispanic, African-American/Black, Other

How many years (approximately) have you been working for the Miami-Dade Police Department?

How many years have you been policing with the use of a body-worn camera?

Before body-worn cameras were required, how many years did you police without the use of a body-worn camera?

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

Perception Questions

Instructions: When comparing using body-worn cameras to not wearing them, how much do you agree with the following statements? Remember to focus on how body-worn cameras have affected you, in your work, at the Miami-Dade Police Department.

Influencing Citizen Behavior: When a citizen (or citizens) knows that an MDPD officer is wearing an activated body-worn camera...

1. Citizens are more cooperative when asked questions.
2. Citizens are more compliant with officer verbal commands.
3. Suspects are less likely to resist arrest.
4. Citizens are less verbally hostile towards officers.
5. Citizens are less physically hostile towards officers.

Influencing Officer Behavior: When wearing an activated body-camera, MDPD officers...

6. Are more likely to give citations instead of warnings.
7. Are less likely to engage in casual encounters.

8. Use less discretion during official law enforcement matters.
9. Are more cautious in decision-making during official law enforcement matters.
10. Are more likely to follow departmental procedures.
11. Have hesitated in elevating the use of force.

Completing Paperwork: When body-worn cameras are used at the MDPD,

12. Officers spend less time filling out paperwork.
13. Officers have more accurate incident accounts.
14. Data assists officers in completing paperwork.
15. Officers rely more on data, than their memories, to complete paperwork.

Comfort and Ease of Use: When an officer at the MDPD uses a body-worn camera...

16. It is easy to retrieve data for a specific incident.
17. The equipment is easy to use.
18. The equipment is comfortable to wear.
19. It is easy to assign data into categories.
20. It is easy to tag and label data segments of evidentiary value.
21. It is easy to upload data.

Supervisor Use of Body-Worn Camera Data for Administrative Purposes: At the MDPD, the data obtained from a body-worn camera is...

22. Used by supervisors to conduct arbitrary compliance reviews.
23. Regarded by supervisors as superior to data contained in departmental reports.
24. Used by supervisors indiscriminately for disciplinary purposes.