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Police officers' best friend?: An exploratory analysis of the effect of service dogs on perceived organizational support in policing

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Abstract:

This study explored the effectiveness of a novel technique for police departments to support their officers and promote wellness: the use of service dogs. We evaluated officer perceptions in two mid-sized, municipal police departments that have wellness programs with a service dog that is permanently assigned to a full-time police officer handler: Groton and Naugatuck, Connecticut. We assessed 6 factors believed to influence police officer wellness including: operational and organizational stress using the Police Stress Questionnaire (McCreary & Thompson, 2006); topical stressors including those related to the COVID-19 pandemic, police use of force and community relations, and police reform efforts; Perceived Organizational Support (POS); receptivity to service dogs; and willingness to seek assistance for mental health issues. We found evidence that exposure to service dogs is significantly linked to both POS and receptivity to service dogs in policing. We also found that officer willingness to seek their department's assistance regarding mental health approaches significance with greater exposure to the service dog ($p=.07$). Although we found no significant evidence that exposure to service dogs is linked to stress reduction, we found that police reforms pose a substantial perceived stress on officers in the study. This finding presents a serious challenge for reformers that risks undermining officer wellness. Implications of our findings and recommendations for future research are discussed.

Keywords:

Police, police officer, wellness, resiliency, stress, service dogs, human-animal interactions, police reform, perceived organizational support theory, organizational climate

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Introduction

Laymen and professionals alike acknowledge the inherently stressful nature of policing (Anderson et al., 2002; Talavera-Velasco et al., 2018). A plethora of research indicates that the operational stressors once thought to be most detrimental to officers, such as risk of injury and death, are not the leading source of stress. Organizational stressors, such as favoritism, bureaucracy, and unsupportive supervisory styles are perceived as more impactful by police officers (Gershon et al., 2009; McCreary & Thompson, 2006; Shane, 2010; Trinkner et al., 2016). Both long-term physiological effects, such as heart disease, and negative mental health effects, such as cynicism and burnout are the result of stress on police officers (Anderson et al., 2002; Ermasova, 2020; Gilmartin, 2002; Talavera-Velasco et al., 2018; Violanti et al., 2017). Stress is also thought to contribute to the frequently discussed high suicide rate in police officers (Queiros et al., 2020; Violanti et al., 2017). In 2019, nearly five times as many officers took their own lives than died at the hands of criminals (Barr, 2020; *FBI Releases 2019 Statistics on Law Enforcement Officers Killed in the Line of Duty*, 2020).

The ability of police officers to effectively mitigate and respond to stress is significantly related to job performance (Shane, 2010) and their restraint when dealing with the public (Ermasova et al., 2020; Gershon et al., 2009; Goff et al., 2013). Research suggests reducing stress is of paramount importance in society's pursuit of improved police performance and police-community relations (Gilmartin, 2002; Queiros et al., 2020; Talavera-Velasco et al., 2018; Violanti et al., 2016). Considering the urgent call for reform in the wake of high-profile incidents, such as the death of George Floyd, police agencies have a vested interest to ensure officers properly handle stress and a duty to provide stress-coping mechanisms in the workplace.

Recently, promoting officer wellness and stress-coping has gained some prominence (Janssens et al., 2018). Police departments have implemented stress coping techniques, such as mindfulness, meditation, and yoga, with mixed results (Christopher et al., 2016; Ermasova et al., 2020). Another new strategy for mitigating the effects of stress on police officers is the use of service dogs in the organizational environment. The use of dogs has demonstrated stress and anxiety reduction effects in a variety of other contexts, such as crime victims and military members with post-traumatic stress disorder (PTSD) (Gonzalez-Ramirez et al., 2014; Gorrity & Stallones, 1998; Helton, 2009).

Based on previous research findings that stress is detrimental to both officer health and work performance, and that perceptions of organizational support mitigate the effects of stress and increase trust, this research seeks to explore the effect of a service dog in police departments on perceived organizational support, job-related stress, and willingness to seek mental health support by police officers. This research should appeal to criminal justice practitioners seeking to improve officer wellness and scholars interested in policing, organizational behavior, and human-animal interactions.

Literature Review

Police Work and Stress

In a review of recent research on police stress and health, Violanti et al. (2017) defined stress as “a general rubric used to describe physiological change or impact brought about by environmental stimuli and psychological mediation” (p. 642). McCreary and Thompson (2006) refined and simplified the list of police stressors into two main categories: operational and organizational. Operational stressors are those sources related to the performance of police work and include risk of injury or death and responding to traumatic incidents such as child abuse. Organizational stressors are those sources from the organizational environment such as favoritism

and harsh supervisory styles. Recent research has identified changes in the socio-political environment as a significant source of stress for police officers, who credit sensationalized media reports as the primary cause of friction with communities (Saunders et al., 2019).

Many operational stressors are unavoidable elements of police work. Emergency 911 calls, for example, run the gamut from routine and boring to life-threatening. Violanti et al. (2017) notes that such frequent exposure to traumatic incidents increases the likelihood of psychological distress, anxiety, and hypervigilance, a state of constant arousal from continuously evaluating one's environment from a threat-based perspective (Gilmartin, 2002; McCaslin et al., 2006). Violanti (2014) also notes that traumatic incidents pose increased risk of officers developing Post-Traumatic Stress Disorder (PTSD). PTSD symptoms include aggression, recklessness, and mood disturbances (Violanti, et al., 2017). Levi-Gigi et al. (2015) found that compared to unexposed civilians, officers who had repeated traumatic exposure responded poorer in routine, low intensity circumstances, but better under high-intensity conditions.

Research consistently shows that higher levels of organizational stress lead to lower levels of job satisfaction, resulting in lower levels of organizational commitment (Jaramillo et al., 2005; Lone et al., 2017; Kula, 2016; Nisar & Rasheed, 2020; Wolfe & Lawson, 2019). Shane (2010) found that organizational stressors are more harmful toward police performance than operational stressors in urban police departments. Other scholars have also concluded that organizational stress is detrimental to the daily functioning and mental health of police officers (Burke, 1988; Gershon et al., 2009; McCreary & Thompson, 2006; Torch, 2002; Violanti et al., 2016). In addition to performance effects, a meta-analysis of general (non-law enforcement specific) workplace stressors conducted by Goh et al. (2015) found that organizational stressors, such as lack of social support and low organizational justice, were associated with negative health outcomes, including

poor physical and mental health leading to physician-diagnosed morbidity and cardiovascular disease.

Officer response to all workplace stress, including operational stress, is highly dependent upon the organizational environment (Paton, 2006). Patterson (2003) found that social support effectively buffers the relationship between work events and feelings of distress. Jaramillo et al. (2005) found that organizational stress in law enforcement is mitigated by perceptions of supervisor support and group cohesiveness. Therefore, enhancing organizational support presents an opportunity to better address the way officers cope with operational stressors, possibly mitigating their mental and physical health challenges.

Organizational Climate

In the study of organizational behavior, the concept of climate and how employees evaluate their work environment plays a key role in performance (James & Jones, 1974). Organizational climate represents the collective perceptions of all members and tends to impose human characteristics onto the organization: for example, the company is caring and benevolent or mean and vindictive (Greenburg, 1993; Hemmelgarn, 2006; James & Jones, 1974). While organizational dynamics pose a significant source of stress for police officers, organizational climate plays a vital role in mediating overall organizational stress. Shane (2010) notes that police culture is characterized by a paramilitary hierarchical rank structure that enhances organizational stress; the greatest impact is felt by the lowest levels of the organization: the police officer. A significant relationship exists between organizational climate and work outcomes, including job satisfaction and commitment (Glisson & Durick, 1988; Glisson & James, 2002; James & McIntyre, 1996; James & Tetrick, 1986). Trinkner et al. (2016) linked perceptions of organizational climate

characterized by fairness and support to lower levels of officer cynicism, and distress, which contribute to hostile interactions with the public (Gilmartin, 2002; Goff et al., 2013).

Campbell et al. (1970) identified four dimensions of organizational climate: 1. Individual autonomy; 2. The degree of structure imposed upon the position; 3. Reward orientation; 4. Consideration, warmth and support. The theory of perceived organizational support (POS) develops the support concept of organizational climate further and uses a social exchange interpretation of the employer-employee relationship: there is a symbiotic relationship between employees' perceptions of organizational support and their level of commitment to the organization (Eisenberger et al., 1986). Eisenberger also states that employees develop globalized beliefs regarding their organization's value of their worth and care for their wellbeing in order to assess the personified organization's willingness to reward work effort. These globalized beliefs regarding POS are consistent with organizational climate; that the organizational environment becomes more than the sum of its parts and plays a key role in the development of an ethos. POS "strengthens employees' effort-outcome expectancy and affective attachment to the organization, resulting in greater efforts to fulfill the organization's goals" (Eisenberger et al, 1986, p. 501). Rhoades and Eisenberger's (2002) meta-analysis found that POS positively influences both individual level outcomes (job satisfaction) and organizational outcomes (performance, commitment, and climate). Law enforcement specific research has linked POS with emotional support, work performance, and pro-social behavior (Adebayo, 2005; Armeli et al., 1998; Boateng, 2014).

The well-noted hyper-masculine organizational climate of policing, coupled with a "helper" stereotype, is thought to result in officers internalizing failure when they experience mental health issues, and results in stigmatization that prevents officers from seeking assistance

(Finn & Tomz, 1997; Raphael, 1986). According to a US Department of Justice (2020) report on the findings of the President's Commission on Law Enforcement and the Administration of Justice:

Unfortunately, law enforcement culture continues to stigmatize self-care, including seeking professional mental health services. Law enforcement officers fear losing everything they have worked for if they admit they struggle with their emotional wellbeing. These issues are fueled by cultural expectations, often held by both the military and law enforcement professions (e.g., pride, toughness, and peer pressure) and a perceived lack of support from the command staff. (p. 199)

Therefore, organizational programs play a key role in officer perception of organizational support and reducing the stigma surrounding mental health. Talarico & Swanson (1982) argue officers tend to be suspicious of orthodox police administrations and recommend a humanistic approach to police management.

Experts recommend that agencies prioritize developing innovative ways to improve organizational climate and strengthen organizational support (Burke & Paton, 2006; Gershon et al., 2009; Shane, 2010). Patterson et al. (2014) conducted a systematic review of police stress management interventions and found the current clinical interventions and coping strategies are largely ineffective. While some coping strategies, such as meditation and mindfulness, have gained recent popularity in policing and demonstrated some positive results (Sharma & Rush, 2014), there are significant operational challenges to reinforce and sustain their widespread implementation (Christopher et al., 2016).

Use of Dogs in Reducing Stress and Improving Social Behavior

There is an extensive evidence base that supports the effectiveness of dogs in mitigating the effects of stress (Gonzalez-Ramirez et al., 2014; Gorrity & Stallones, 1998; Helton, 2009).

Unlike some of the previously discussed strategies, the stress reducing effects of dogs require no conscious effort. In a quasi-experimental design study, the presence of a dog during police officer questioning of an eyewitness significantly decreased the witness's heart rate to baseline compared to the control group that was given a glass of water (Peters, 2017). Allen et. al. (1991;2002) found dogs provide stress coping physiological benefits during stressful tasks. Research also indicates that interacting with a dog lowers cortisol levels, a hormone naturally released during fight or flight response, and results in increased oxytocin (OT), a peptide hormone with anti-stress effects (Barker et al., 2005; Beetz et al., 2012; Miller et al., 2009; Odendaal, 2000; Odendaal & Meintjes, 2003), signifying improved stress coping.

Of particular interest to the use of service dogs in policing, due to similar organizational dynamics and exposure to trauma, is the promising results regarding their use with military veterans who experience PTSD. O'Haire and Rodriguez (2018) conducted a nonrandomized efficacy trial of veterans with PTSD and found that symptoms were significantly reduced in those veterans who received a service dog compared to the control group. Yarborough et al. (2018) conducted a qualitative study and found veterans with service dogs reported reduced hypervigilance, improved sleep, and less invasive trauma-related thoughts. Lass-Hennemann et al. (2020) found that, contrary to much evidence on human-animal interactions, pet ownership by those employed in fields at risk for traumatization did not have a significant effect on posttraumatic stress and burnout.

Regarding the organizational context, Wells and Perrine (2001) found that workers who bring their pets to work perceived less stress, improved health, and enhanced organizational climate compared to employees who did not. Barker et al. (2012) found that in a mid-size private corporation (approximately 550 employees), employees who brought their dog to work reported

lower levels of perceived stress throughout the day than employees who did not. Barker also found both the dog group and non-dog group scored high in perceived organizational support and job satisfaction. While some private companies bring professional support dogs into the workplace (Goffee & Jones, 2013; Paul, 2018; Von Begen & Bressler, 2015; Wilkin et al., 2016) we are unaware of any evaluations of this strategy on workplace stress levels.

Dogs also demonstrate an ability to serve as a catalyst for human social interactions (Messent, 1983; Veevers, 1985). McNicholas and Collis (2000) found that humans are more social with strangers when a dog is present, which suggests that the presence of a dog for officer wellness may facilitate the process of seeking assistance by reducing social barriers. Colarelli et al. (2017) found that dogs in a group environment promote communication, collegiality, and cooperation, which are significant contributors to the organizational climate (Jones & James, 1979). According to Cunha et al (2019), dogs can help facilitate team building, reduce workplace stress, foster moral associations, and promote an overall more effective workforce. Given the necessity for police officers to act in group settings and the contribution of prosocial behavior to organizational climate, there is great potential for service dogs to contribute to officer wellness and agency efficiency.

Methods

Research Questions

This research seeks to answer the following questions:

- Does exposure to a service dog in the workplace affect police officer perception of organizational support?
- Are police officers supportive of the use of service dogs for wellness in the organizational environment?

- Does exposure to a service dog in the workplace affect perceived stress by police officers?
- Does exposure to a service dog in the workplace affect police officer willingness to seek assistance for mental health issues?

Participants and Protection

A non-profit service dog organization, Puppies Behind Bars (PBB), provides service dogs to police agencies for the purpose of officer wellness and introduced the lead author to the police chiefs of the Groton (GPD) and Naugatuck (NPD) police departments in Connecticut. At the time of the study, GPD employed 66 and NPD employed 65 sworn members. Groton is a mid-size town in South Eastern Connecticut and Naugatuck is a similar, slightly more affluent mid-size town in Central Western Connecticut. Both departments serve communities with similar demographics (see Table 1).

Table 1. City Demographics

	Groton, CT	Naugatuck, CT	State of Connecticut
Population	38,436	31,108	3,565,287
% White	76.7	78.7	79.7
% Black	7.1	9.3	12.2
% Hispanic	13.7	12.5	16.9
% Asian	5.2	2.7	5.0
\$ Median Household Income	66,657	74,944	78,444
Crime Index per 100,000*	1593.3	1,496	2,005.2

Source: U.S. Census Bureau QuickFacts, 2019

* State of Connecticut (2018)

The police chief and dog handler from each agency were consulted regarding logistics for data collection. Each department has one service dog and a female police officer assigned full-time as handler, who was selected because she championed the service dog program to the chief. Despite an application process for the new handler position, perceptions of injustice and favoritism posed a significant threat to internal validity. To mitigate this challenge, the study was presented

as focused on overall police wellness, rather than specifically on the service dog. Each chief appointed a supervisor to act as an administrative assistant for the distribution of the survey. One week prior to commencement, the administrative assistants and chiefs publicized the project through internal messaging as an effort to assess sources of stress and improve the work environment. The research team was provided with email addresses for all members of each department.

The email soliciting participation contained a link that redirected the participant to the web-based survey site. The email described the purpose of the research, assured the participant of confidentiality and anonymity, and provided an informed consent form. No personal identifiers were recorded or shared with the GPD and NPD management teams. Only the research team had access to the raw data, which was stored in a secure, password protected account.

All sworn members of each department below the rank of Deputy Chief (excluding the handler and the administrative assistant) was emailed a link to the survey instrument directly by the research team.¹ For GPD, a total of 62 sworn members were emailed. Out of the 62 sworn members, 38 responded. Six were duplicate responses and excluded, making the total number of sworn responses 32 out of 62 (51.6%). For NPD, a total of 61 sworn members were emailed. Out of the 61 sworn members, 32 responded. One was a duplicate response, making the total number of sworn responses 31 out of 62 (50%). Our final response rate was approximately 51.2% (63 out of 123), which is higher than the standard response rate for web-based policing with recent studies reporting rates in the mid-20% range (Carter & Grommon, 2017; Pickett & Nix, 2019).

Instrument

¹ The research originally intended to include police dispatchers as well, but this population was later dropped due to low sample size (n=10).

To address the four research questions, the survey instrument was designed to assess the service dog's influence on six distinct factors believed to influence officer wellness: operational and organizational stress; topical stressors including those related to the COVID-19 pandemic, police use of force and community relations, and police reform efforts; POS; receptivity to service dogs; and willingness to seek assistance for mental health issues. The survey consisted of 70 questions and took approximately fifteen minutes to complete. For a copy of the survey, please see Appendix A.

For the stress dimension, the Police-Stress Questionnaire (PSQ) developed by McCreary & Thompson (2006) was chosen due to its simplicity, validity, reliability, and relevance to the police environment (McCreary et al, 2017). The PSQ consists of a 40 item stress diagnostic consisting of two subscales, 20 items measuring operational policing content and 20 items measuring organizational policing context stressors. The PSQ asks officers to indicate how much stress they experience regarding various aspects of policing using a 7-point Likert scale ranging from 1- "no stress at all", 4 – "moderate stress", to 7 "a lot of stress". The PSQ was established through a three-phase process including focus group development, pilot testing, and reliability and validity testing (McCreary & Thompson, 2006), and has been used in recent studies interested in police officer stress (e.g., Queiros et al., 2020; Shane, 2010).

Due to the timeliness of this research regarding police stress, as well as in recognition of prior research on socio-political sources of police stress (Saunders et al. , 2019), the third section of the survey consisted of a topical stress dimension regarding perceived stressors related to the COVID-19 pandemic, police/community relations and use of force in the wake of the George Floyd incident in May 2020, and the ensuing police reform efforts. The topical dimension used the same 7-point Likert scale from the PSQ to facilitate analysis and generalizability. The topical stress

dimension was developed based on the researchers' subject matter expertise in policing, including informal communication with police officers, and was reviewed by peer support counselors from an uninvolved police agency and the police chiefs and dog handlers from the departments in the study.

The fourth section of the survey assessed officer perceptions of their department's employee wellness efforts and used a 5-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree". The dimension of perceived organizational support (POS) hypothesized to be most heavily impacted by contact with the department's service dog is perceived organizational care for an employee's wellbeing; therefore, POS is assessed through a single question that encapsulates the spirit of this dimension and appears in the original scale developed by Eisenberger et al. (1986): "My employer cares for my well-being". Employee perception of the organization's value of their contributions was not assessed because the service dog was not expected to impact this dimension. The receptivity to the service dog assessment first verifies awareness of the program, and then evaluates perception of effectiveness in four questions developed by the authors to assess officer perception regarding the dog as an indication of department care for well-being and its ability to address officer wellness and resiliency, increase officer comfort in discussing personal problems, and reduce officer stress. Based on the aforementioned potential bias regarding the service dog program, this section was placed after the stress and perceived organizational support dimensions. Officer willingness to seek assistance for mental health is assessed for three mechanisms of support: co-workers, agency, and external support. To avoid well-noted challenges regarding stigma (U.S. Department of Justice, 2020), the term "personal problem" was substituted for mental health.

The demographic section of the survey also assessed assignment, years employed by the department, and years of experience in public safety. To maximize validity and reduce potential bias, monthly exposure to the service dog was the final item.

Measures

Independent variable

For the purpose of analysis, the participants were divided into either “high exposure” or “low exposure” groups based on exposure to treatment as self-reported through the survey item measuring monthly exposure to the service dog. Those officers who reported no or 1-2 encounters during a typical month were designated “low exposure” and officers who reported 3 or more encounters were designated “high exposure”.

Control variables

The analysis controlled for the agency (GPD or NPD) and experience (years with department). Agency was dichotomized, with GPD officers coded as “1” and NPD officers coded as “0.” Experience was an ordinal measure coded from 1 (less than 2 years) through 5 (more than 20 years) (see Table 1 for a breakdown of all categories). Race and sex were not included as control variables because of sample homogeneity and lack of statistical power. All officers were male White except 4 who identified as female and 3 as Hispanic.

Dependent variables

Perceived Organizational Support (POS) is represented by the survey item that indicates belief that the police department supports the officer.

Operational stress represents the mean sum of 20 items on the PSQ-Op and organizational stress represents the mean sum of the 20 items on the PSQ-Org, which is consistent with previous research (McCreary & Thompson, 2006; McCreary et al., 2017; Shane, 2010).

Topical stress was divided into 3 separate variables including COVID-19 issues, police use of force/community relations, and police reform efforts. The COVID-19 variable is a composite measure consisting of the scores from 4 items that assessed perceived stress regarding personally contracting COVID-19, bringing it home to one's family, financial and work/family conflict, and conducting enforcement of COVID-19 restrictions/regulations. The use of force/community relations variable is a composite measure consisting of the scores of 4 items: media portrayals of and public sentiment regarding police use of force and improper treatment of minority communities, video footage being taken out of context, and being accused of misusing force. The police reform variable is a composite measure consisting of the scores of 3 items including legislative reforms, new oversight authorities, and civil liability.

Receptivity to the service dog for officer wellness is a composite measure consisting of the scores of 4 items: the dog as a symbol of POS, perceived effectiveness in addressing wellness and resiliency, ability to make employees feel comfortable to discuss mental health issues, and stress reduction.

Police officer willingness to seek assistance is represented by 3 distinct items: willingness to seek assistance from a co-worker, officially through department mechanisms (e.g. employee assistance program), and outside the department (e.g. a private clinician). Each item represents a nuanced difference in an officer's willingness to seek assistance: speaking to a colleague represents an organizational climate characterized by collegiality; seeking assistance through the department's official mechanisms represents POS and trust; and willingness to seek assistance from outside the department represents an openness to mental health support, but a possible distrust of the organization.

Cronbach's α tests were used to measure the reliability of the indices used as dependent variables given its superior performance in small samples relative to other reliability measures (Ercan et al., 2007). In all cases, α levels were above the 0.70 value widely considered the minimum threshold for reliability: operational stress ($\alpha=0.92$); organizational stress ($\alpha=0.91$); use-of-force/community relations stress ($\alpha=0.90$); COVID-19 stressors ($\alpha=0.76$); criminal justice reform stress ($\alpha=0.79$); and receptivity to the service dog ($\alpha=0.92$).

Analytical Approach

Two statistical approaches were used to explore each research question. First, we conducted means tests to determine how outcome measures differ between respondents reporting frequent exposure and infrequent exposure to the support dog. The precise test used depended on the observed distribution. T-tests were used for all outcome measures following a normal distribution. A non-parametric Wilcoxon rank-sum (i.e. Mann Whitney U) test was used for all outcome measures in violation of the normality assumption.² Normality was assessed via the *sktest* command in Stata 15. We then conducted regression analyses to determine whether differences across groups held when controlling for years with the police agency and agency of employment. Given some outcome measures did not follow a normal distribution, we incorporate generalized linear regression which is more robust to normality violations than ordinary least square regression. The dependent variable was standardized in each model given the different scales used across survey measures. Regression findings are reported as exponential coefficients, which communicate the effect of frequent exposure to the support dog in terms of percentage difference as compared to the infrequent exposure group.

² However, we should note that disparate findings of T-tests and rank sum tests were similar for all outcome measures.

Results

Descriptive statistics are presented in Table 2. For all composite indices, the average item rating is discussed in text to account for the differing scales across measures (McCreary and Thompson, 2006). On average, officers reported the level to which their agency cares about their well-being as 3.17 (between neutral and agree) on a 5-point scale, suggestive of a moderate level of POS. Officers reported generally low levels of receptivity to the support dog, with an average rating of 2.40 (between neutral and disagree) on a 5-point scale. Criminal Justice Reform Stressors were the strongest source of officer stress, with an average item rating of 5.83 on a 7-point scale. This was followed by Use of Force Stressors and COVID-19 Stressors, with average item ratings of 5.40 and 4.18 on a 7-point scale, respectively. Operational Stressors (average item rating of 4.02) and Organizational Stressors (average item rating of 3.61) ranked lowest. This suggests that contemporary socio-political stressors (Saunders, et al., 2019) may be a greater source of police officer stress than the operational and organizational stressors typically measured in the larger body of research. In terms of officer willingness to seek assistance, respondents most frequently reported willingness to seek help from someone outside of the police agency (3.61) followed by a member from within the police agency (3.31). Lowest levels of support were observed for seeking help directly from the police agency (2.72). Eleven officers reported never being exposed to the support dog while 19 reported between 1 and 2 contacts per month. These categories were combined to create the “Infrequent Exposure” group (n=30) for the analysis. The “Frequent Exposure” group (n=33) was comprised of officers reporting 3-5 (n=10), 5-10 (n=12), or more than 10 (n=11) monthly contacts with the support dog. In terms of years working for the police agency, 10 officers reported less than 2, 22 between 2 and 5, 4 between 6 and 10, 17 between 16

and 20, and 5 more than 20. The sample was divided approximately evenly between officers from the Groton PD (n=32) and Naugatuck PD (n=31).

Table 2. Descriptive Statistics

<i>Continuous Measures</i>				
Variable	Mean	Std. Dev.	Minimum	Maximum
PD Cares	3.17	1.21	1	5
Receptivity to Support Dog	9.61	4.63	4	20
Receptivity to Support Dog (avg. item rating)	2.40	1.16	1	5
Organizational Stressors	72.11	21.52	23	114
Organizational Stressors (avg. item rating)	3.61	1.08	1.2	5.7
Operational Stressors	80.31	21.81	31	137
Operational Stressors (avg. item rating)	4.02	1.09	1.6	6.9
COVID-19 Stressors	16.73	6.40	4	28
COVID-19 Stressors (avg. item rating)	4.18	1.60	1	7
Use of Force Stressors	21.62	5.93	5	28
Use of Force Stressors (avg. item rating)	5.40	1.48	1.3	7
CJ Reform Stressors	17.50	3.82	4	21
CJ Reform Stressors (avg. item rating)	5.83	1.27	1.3	7
Seek Help from Member	3.31	1.37	1	5
Seek Help from Department	2.72	1.37	1	5
Seek Help from Outside of Department	3.61	1.24	1	5
<i>Categorical Measures</i>				
Variable	Frequency	Percent		
Exposure to Support Dog				
Never	11	11.46		
1-2 times per month	19	30.16		
3-5 times per month	10	15.87		
5-10 times per month	12	19.05		
>10 times per month	11	17.46		
Years with the police agency				
Less than 2	10	16.13		
2-5	22	35.48		
6-10	4	6.45		
11-15	17	27.42		
16-20	4	6.45		
More than 20	5	8.06		
Police Agency				
Groton PD	32	50.8		
Naugatuck PD	31	49.2		

Table 3 and Table 4 display the results of the mean and Wilcoxon rank-sum tests. The frequent exposure group reported significantly ($p=.01$) higher levels of POS (3.61) compared to the infrequent exposure group (2.80). Differences approached statistical significance ($p.<0.10$) for two additional outcome measures. Officers in the frequent exposure group on average reported higher receptivity to the support dog (10.61 vs. 8.55; $p=.08$) and an increased willingness to seek help from the department (3.06 vs. 2.40; $p=.07$) as compared to the infrequent exposure group. No other tests approached statistical significance.

Table 3. Mean and Rank Sum tests

<i>DV: PD Cares</i>						
Treatment	N	Mean	S.E.	Std. Dev.	t	p.
Infrequent Exposure	30	2.80	0.20	1.10	-2.64	0.01
Frequent Exposure	33	3.61	0.21	1.23		
<i>DV: Receptivity to Support Dog</i>						
Treatment	N	Mean	S.E.	Std. Dev.	t	p.
Infrequent Exposure	29	8.55	.80	4.29	-1.77	0.08
Frequent Exposure	33	10.61	.84	4.80		
<i>DV: Organizational Stressors</i>						
Treatment	N	Mean	S.E.	Std. Dev.	t	p.
Infrequent Exposure	29	74.76	4.71	25.34	0.91	0.37
Frequent Exposure	33	69.79	3.06	17.57		
<i>DV: Operational Stressors</i>						
Treatment	N	Mean	S.E.	Std. Dev.	t	p.
Infrequent Exposure	29	80.65	4.15	22.34	0.12	0.90
Frequent Exposure	30	79.97	3.94	21.56		
<i>DV: COVID-19 Stressors</i>						
Treatment	N	Mean	S.E.	Std. Dev.	t	p.
Infrequent Exposure	30	15.80	1.32	7.22	-1.13	0.26
Frequent Exposure	33	17.64	.98	5.61		
<i>DV: Use of Force Stressors</i>						
Treatment	N	Mean	S.E.	Std. Dev.	z	p.
Infrequent Exposure	30	21.50	1.16	6.38	0.04	0.97

Frequent Exposure	33	21.73	.97	5.59		
DV: CJ Reform Stressors						
Treatment	N	Mean	S.E.	Std. Dev.	z	p.
Infrequent Exposure	30	17.90	.70	3.85	1.05	0.29
Frequent Exposure	33	17.12	.67	3.86		

Note: Effects reported as *t* refer to t-tests. Effects reported as *z* refer to Wilcoxon rank-sum tests.

Table 4. Mean and Rank Sum tests (continued)

DV: Seek Help from Member						
Treatment	N	Mean	S.E.	Std. Dev.	z	p.
Infrequent Exposure	30	3.30	.241	1.29	-0.23	0.82
Frequent Exposure	33	3.33	.26	1.47		
DV: Seek Help from Department						
Treatment	N	Mean	S.E.	Std. Dev.	z	p.
Infrequent Exposure	30	2.40	.21	1.13	-1.82	0.07
Frequent Exposure	33	3.06	.26	1.50		
DV: Seek Help from Outside Department						
Treatment	N	Mean	S.E.	Std. Dev.	t	p.
Infrequent Exposure	30	3.33	.23	1.27	-1.23	0.22
Frequent Exposure	32	3.72	.21	1.20		

Note: Effects reported as *t* refer to t-tests. Effects reported as *z* refer to Wilcoxon rank-sum tests.

Table 5 and Table 6 report the findings of the generalized linear regression models. In all models, “Frequent Exposure” is the primary covariate of interest. Regression results indicate similar patterns as the mean and rank-sum tests, though statistical significance levels sometimes changed when controlling for years at agency and agency of employment. The frequent exposure group reported levels of receptivity to the support dog that were twice as high as the infrequent exposure group ($\text{exp}(b) = 2.07$). This finding was statistically significant ($p=.017$). Officers frequently exposed to the support dog scored 75% higher than the infrequent exposure group ($\text{exp}(b) = 1.75$) when reporting POS. This finding approached statistical significance ($p=.052$). Lastly, officers frequently exposed to the support dog were 68% more likely than the infrequent

exposure group ($\exp(b) = 1.68$) to seek help from their department. This finding approached statistical significance ($p=.077$).

Table 5. Generalized Linear Regression Findings

<i>DV: PD Cares</i>						
Variable	Exp (b)	S.E.	z	p.	Lower	Upper
Frequent Exposure	1.75	0.505	1.94	0.052	0.994	3.066
Years at Agency	0.89	0.079	-1.45	0.147	0.752	1.044
Agency	1.04	0.30	0.15	0.882	0.594	1.835
<i>N</i>	61					
<i>Log likelihood</i>	-81.7					
<i>DV: Receptivity to Support Dog</i>						
Variable	Exp (b)	S.E.	z	p.	Lower	Upper
Frequent Exposure	2.07	0.63	2.39	0.017	1.141	3.762
Years at Agency	0.99	0.09	-0.06	0.950	.835	1.184
Agency	1.67	0.51	1.69	0.091	.921	3.036
<i>N</i>	60					
<i>Log likelihood</i>	-83.4					
<i>DV: Organizational Stressors</i>						
Variable	Exp (b)	S.E.	z	p.	Lower	Upper
Frequent Exposure	0.65	0.18	-1.53	0.125	.379	1.126
Years at Agency	1.07	0.08	0.85	0.397	.914	1.256
Agency	0.52	0.14	-2.35	0.019	.302	0.898
<i>N</i>	60					
<i>Log likelihood</i>	-77.9					
<i>DV: Operational Stressors</i>						
Variable	Exp (b)	S.E.	z	p.	Lower	Upper
Frequent Exposure	0.85	0.28	-0.47	0.635	.447	1.633
Years at Agency	0.95	0.09	-0.60	0.550	.791	1.132
Agency	0.76	0.24	-0.85	0.398	.396	1.444
<i>N</i>	57					
<i>Log likelihood</i>	-80.9					
<i>DV: COVID-19 Stressors</i>						
Variable	Exp (b)	S.E.	z	p.	Lower	Upper
Frequent Exposure	1.21	0.37	0.63	0.529	0.665	2.215
Years at Agency	1.01	0.09	0.12	0.903	0.848	1.205
Agency	0.76	0.23	-0.91	0.364	0.414	1.382
<i>N</i>	61					
<i>Log likelihood</i>	-85.7					

Note: Agency = 1 for respondents who work for Groton PD; agency = 0 for respondents who work for Naugatuck PD.

Table 6. Generalized Linear Regression Findings (continued)

<i>DV: Use of Force Stressors</i>						
Variable	Exp (b)	S.E.	z	p.	Lower	Upper
Frequent Exposure	1.10	0.31	0.35	0.729	0.638	1.902
Years at Agency	1.04	0.08	0.49	0.621	0.888	1.221
Agency	1.01	0.28	0.03	0.974	0.584	1.744
<i>N</i>	61					
<i>Log likelihood</i>	-79.88					
<i>DV: CJ Reform Stressors</i>						
Variable	Exp (b)	S.E.	z	p.	Lower	Upper
Frequent Exposure	0.91	0.24	-0.34	0.732	0.538	1.546
Years at Agency	1.02	0.08	0.25	0.799	0.875	1.189
Agency	1.14	0.31	0.50	0.615	0.675	1.944
<i>N</i>	61					
<i>Log likelihood</i>	-77.79					
<i>DV: Seek Help from Member</i>						
Variable	Exp (b)	S.E.	z	p.	Lower	Upper
Frequent Exposure	1.09	0.347	0.27	0.791	0.582	2.033
Years at Agency	0.977	0.091	-0.25	0.802	0.814	1.172
Agency	1.133	0.362	0.39	0.697	0.606	2.119
<i>N</i>	61					
<i>Log likelihood</i>	-88.08					
<i>DV: Seek Help from Department</i>						
Variable	Exp (b)	S.E.	z	p.	Lower	Upper
Frequent Exposure	1.68	0.496	1.77	0.077	0.946	3.001
Years at Agency	1.05	0.091	0.62	0.538	0.891	1.247
Agency	1.03	0.303	0.08	0.933	0.575	1.828
<i>N</i>	61					
<i>Log likelihood</i>	-83.23					
<i>DV: Seek Help from Outside Department</i>						
Variable	Exp (b)	S.E.	z	p.	Lower	Upper
Frequent Exposure	1.46	0.434	1.27	0.203	0.815	2.615
Years at Agency	1.28	0.109	2.92	0.004	1.085	1.512
Agency	0.86	0.254	-0.52	0.602	0.479	1.533
<i>N</i>	60					
<i>Log likelihood</i>	-80.84					

Note: Agency = 1 for respondents who work for Groton PD; agency = 0 for respondents who work for Naugatuck PD.

Lastly, we conducted robustness checks by running two separate sets of regression models on the Groton PD and Naugatuck PD portions of the sample. The robustness check acknowledges

that contextual differences across the agencies may influence how exposure to the service dog relates to the outcome measures. In eight of the ten regression models, the direction and statistical significance of the relationship between service dog exposure and the dependent variable were highly similar across the Groton PD and Naugatuck PD. The lone exceptions were for receptivity to the support dog and organizational stressors. In both cases, exposure to the service dog was significantly related to the dependent variable in Naugatuck PD and insignificant in Groton PD. These models were also the only two in which the agency control variable achieved statistical significance, with Groton PD related to higher levels of receptivity to the support dog and lower levels of organizational stress. As such, the heterogeneous effect of service dog exposure across agencies may be due to differences in outcome measure baseline levels.

Discussion

This study sought to explore the effect of service dogs on perceived levels of officer support and officer wellness. The results are promising. Our means analysis shows that officers who report more exposure to the department's service dog report significantly higher levels of POS compared to officers who report less exposure. Since POS is linked to both individual outcomes, including job satisfaction and prosocial behavior, and organizational outcomes, including performance, commitment, and climate (Adebayo, 2005; Armeli et al., 1998; Boateng, 2014; Rhoads & Eisenberger, 2002), service dogs may represent a low-cost, viable mechanism for improving agency performance and officer wellness. Once controls are added to the general linear regression model, POS diminishes slightly and approaches significance ($p=.052$). Considering the relatively small sample size ($n=63$), this result is encouraging.

All officers involved in the study indicated knowledge of the service dog program. The regression model indicated exposure to the service dog is a significant predictor of receptivity to

service dogs in the organizational environment ($p=.017$). This finding suggests the possibility that officer acceptance of the service dog has a direct relationship with how the dog is deployed – the more interaction officers have with the dog, the more affinity toward the dog in the workplace. Therefore, simply increasing exposure to the dog may offer practitioners a mechanism for improving receptivity. The reverse hypothesis could also be true: it is possible that officers who are more receptive to service dogs self-assigned to the high exposure group. Stated differently, officers who liked the dog may have sought more contact with the dog. However, it is important to note that, despite significant improvement, receptivity to the service dog remained low in both groups. The fact that receptivity to service dogs in policing remains low in the high exposure group, coupled with the significant finding of improved POS, suggest that the dog may work as a latent construct and although organizational climate is improved, the previously noted hyper-masculine environment of policing continues to perpetuate the idea that service dogs are contrary to that ethos.

There is a well-documented reluctance among officers to seek assistance for mental health issues (U.S. Department of Justice, 2020). Our analysis supports this cultural phenomenon. Out of the possible assistance options presented (co-worker, agency, external), the combined sample indicated the lowest level of support for seeking help directly from the agency. Once exposure to the service dog is accounted for, the “frequent exposure” group approaches significance and both the mean test ($p=.07$) and the regression model ($p=.077$) show marked improvement compared to the “infrequent exposure” group. Our findings suggest that service dogs may provide a practical strategy for agencies to demonstrate organizational support and foster trust, encouraging members to seek assistance from their department. Many police departments dedicate substantial time and resources to mental health outreach, education, and support in an effort to elicit trust from officers

undergoing personal hardships and encourage self-report to the agency. Although external providers also offer a mechanism for support, seeking assistance directly from the agency empowers the organization to control the quality of service provided and better mitigate risk. The evidence that service dogs may facilitate officers to seek assistance from their department should be quite appealing to police managers.

Although our analysis did not indicate exposure to the service dog was a significant predictor of stress, our findings regarding police stressors are noteworthy. Descriptive statistics for the combined sample indicate that operational stressors pose a greater perceived source of stress than organizational stressors (4.02 vs. 3.61). This is contrary to previous studies that indicate organizational stress is greater than operational stress in policing (McCreary & Thompson, 2006; Shane, 2010; Trinkner et al., 2016). Both statistics are also higher than the normative values for the PSQ-Op (4.02 vs. 3.26) and the PSQ-Org (3.61 vs. 3.53) (McCreary et al., 2017). There are two plausible explanations for these findings. These particular police departments may be characterized by a generally supportive organizational climate, as demonstrated by the progressive and supportive decision to obtain a service dog for officer wellness. The supportive climate may lead to lower levels of organizational stress as predicted in the literature. An alternative explanation is that the study occurred during a particularly stressful time for police officers (Fall 2020) given the challenges they faced from both the pandemic and the socio-political stressors of strained community relations and police reform. It is quite possible that the topical stressors measured in the subsequent portion of the instrument also influenced the operational stress assessment.

Regarding our findings on topical sources of stress, we found that the values of all three of our composite variables were substantively higher than both our sample and the normative values for the PSQ-Op and PSQ-Org. COVID-19 represents a moderately high source of stress (4.18).

Despite the uncertain perils officers faced during the pandemic, it could be argued that officers coped relatively well due to their ability to normalize stress and perform well in high-stress environments, as also noted in previous research (James et. al., 2019; Levi-Gigi et al., 2015). In comparison, however, police reform poses the greatest perceived source of officer stress (5.83) measured in this study, followed by use of force/community relations (5.40). Both are also significantly greater than the highest normative value calculated by McCreary et al. (2017), which was 4.32 (bureaucratic red tape on the PSQ-Org). These findings suggest that current efforts toward reform represent a significant source of police officer stress. Considering the well-established evidence that links stress to police aggression and performance (Gilmartin, 2002; Violanti et al., 2016), the policy changes aimed at improving police-community relations pose a significant challenge to the very problem they seek to solve. We recommend front-line officers who live with the stress of policing have greater input into reform efforts. We also recommend that policy makers strive to reduce officer stress by promoting officer wellness and mental health, rather than adding to the stressors officers face. Our findings indicate that expanding the use of service dogs in policing is one possible mechanism that may remedy some of the behavior reforms seek to address. We acknowledge that although the topical stress assessment was developed based on informal communication with police officers and reviewed by subject matter experts as previously noted, we did not formally test the reliability and factor structure of these new measures.

It is important to note that at the time of this study, both service dog programs were relatively early in their tenure. The service dog program began at GPD in August, 2019; however, the original dog was determined not suited for employee wellness purposes and a new dog was assigned in September, 2020. The service dog was assigned to NPD in August, 2020. The data collection for this study took place in October and November, 2020. The early tenure of the

programs, as well as the modification in dog assignment, are both limitations of this study and may have contributed to our insignificant findings regarding the effect of the dog on perceived stress. As with any new intervention, lessons were learned during the implementation of the service dog programs, which may alter the effect of service dogs over time. We are encouraged by our finding regarding the effect of the dogs on POS, especially given the limited duration of the programs. Considering the strong links found between organizational climate and organizational outcomes (Glisson & Durick, 1988; Glisson & James, 2002; James & McIntyre, 1996; James & Tetrick, 1986), we are hopeful that the service dog program will continue to pay dividends and may reduce organizational stress in the long-run.

Despite our best efforts, this study was limited in several key dimensions. As with many interventions, we were unable to administer a pre-test prior to the programs' implementation. Due to this shortcoming, we are unable to specifically address time-order causality and we are cautious to frame our analysis as exploratory in nature. Future research should consider deploying service dogs in a more controlled manner allowing for experimental or quasi-experimental tests of program effect. Our survey is also designed based on self-reported data and subject to all the well-established validity challenges associated with survey instruments. Self-reported assessment should provide an accurate scoring of the dog's effect on officer perception of stress and organizational support; however, future research should use data from a wider range of sources to reflect the multi-faceted nature of officer stress.

In order to assess the effect of the service dog, we divided officers into high and low exposure groups based on self-reported data. The decision to designate officers as "low exposure" based on 2 or fewer monthly encounters and "high exposure" as three or more encounters allowed us to divide the treatment groups as close to the median as possible and provide for maximum

statistical power (low exposure $n = 30$ compared to high exposure $n = 33$). We acknowledge that our research design precluded more granular measurement of dog exposure. Our validity is equally bound by the natural selection bias that derives from using a survey-based modality with a convenience sampling technique. While our response rate was higher than what some prior survey research of officers has achieved, we acknowledge the benefits that would have come with a larger sample of officers. As such, we recommend that our research be replicated in larger jurisdictions to work towards creating a body of reflective of the police profession as a whole with more rigorous experimental methods that will allow for more granular measurement of dog exposure.

Finally, one crucial limitation of this study was the homogenous nature of the sample population and the small sample size ($n = 63$). The demographic composition of both departments are overwhelmingly male Whites. Out of the officers who indicated sex and race, only 4 identified as female and 3 as Hispanic. The limited demographics of the department included in the study and small sample frame are byproducts of the convenience sampling often required for program evaluations and one we could not possibly overcome. Simply stated, we were limited in the availability of police departments with service dogs in their officer wellness programs and, once again, we are cautious to frame our research as exploratory. Ideally, future studies could and should address any racial or gender disparities in how service dogs affect officers. As more departments consider using a service dog for their officer wellness programs, more opportunities may arise to implement true experimental designs with larger sample sizes and greater statistical power.

Another area in need of further study is the effect of a service dog on police-community relations. During our interactions with agency representatives, we noted significant challenges involved when a dog that is dedicated for officer wellness is also used for community relations. We wonder if the same phenomenon would arise if the reverse occurred. We suspect a more

positive experience may result if the agency obtained the service dog for community relations, and then added the additional role of officer wellness. Using this strategy might be an effective technique to thwart the resentment and hostility that comes from perceived withdrawal of support, as opposed to the surprise and goodwill of adding it. We are hopeful that the use of service dogs in policing will grow and opportunities for exciting and stimulating research will grow with it.

Conclusion

Despite the methodological limitations and the challenges encountered during program implementation, this exploratory study generated promising results. This study found that exposure to a service dog is significantly linked to POS and receptivity to service dogs in the police organizational environment. Our analysis also uncovered evidence that suggests exposure to service dogs may increase officer willingness to seek assistance for mental health issues from their agency. Our finding that service dogs may improve POS is consistent with previous research that demonstrates dogs promote pro-social behavior and the implication that exposure to service dogs may improve officers' willingness to seek mental health support from their agency contributes to the body of knowledge regarding police officer wellness, as well as human animal interactions. Although the service dog was not significantly linked to reductions in officer stress, our exploratory study revealed that the nature of the socio-political landscape, including police reform efforts, are a leading source of stress for officers. This suggests that some police reform efforts that seek to heal police-community relations may cause additional police stress that results in higher levels of cynicism, burnout, and police aggression. While police reform may be necessary, it is essential to institute reforms in a manner that inspires and promotes officer wellness. Addressing officer wellness and building organizational support and trust are crucial conduits for

improving police-community relations. This exploratory study found encouraging evidence that service dogs may be a viable option for helping make those lofty goals a reality.

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