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Disorder policing to reduce crime: An updated systematic review and meta-analysis

Anthony A. Braga^{1,2} | Cory Schnell³ | Brandon C. Welsh^{4,5}

¹Department of Criminology, University of Pennsylvania, Philadelphia, Pennsylvania, USA

²Harris School of Public Policy, University of Chicago, Chicago, Illinois, USA

³Department of Criminology and Criminal Justice, University of South Carolina, Columbia, South Carolina, USA

⁴School of Criminology and Criminal Justice, Northeastern University, Boston, Massachusetts, USA

⁵Department of Global Health and Social Medicine, Harvard Medical School, Boston, Massachusetts, USA

Correspondence

Anthony A. Braga, Department of Criminology, University of Pennsylvania, 558 McNeil Bldg, 3718 Locust Walk, Philadelphia, PA 19104-6286, USA. Email: abraga@upenn.edu

Abstract

Research Summary: Broken windows theory suggests that police can prevent serious crime by addressing social and physical disorder in neighborhoods. In many U.S. cities, recent increases in disorder, fear, and crime have initiated calls for an intensification of disorder policing efforts. Disorder policing programs can be controversial, with evaluations yielding conflicting results. Further, a growing number of descriptive analyses of aggressive order maintenance programs raise concerns over varied negative consequences, such as increased racial disparities in arrests of citizens. Systematic review and meta-analytic techniques were used to conduct an updated analysis of the effects of disorder policing on crime. Fifty-six eligible studies including 59 independent tests of disorder policing interventions were identified, representing almost twice the number included in the previous review. As part of the meta-analysis, new effect size metrics were used. The updated meta-analysis suggests that policing disorder strategies are associated with overall statistically significant crime reduction effects that spill over into surrounding areas. The strongest program effect sizes were generated by community and problem-solving interventions designed to change social and physical disorder conditions at crime

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hot spots. Conversely, aggressive order maintenance strategies did not generate significant crime reductions. **Policy Implications:** The types of strategies used by police departments to address disorder seem to matter in controlling crime, and this holds important implications for police–community relations, justice, and crime prevention. Further research is needed to understand the key programmatic elements that maximize the capacity of these strategies to prevent crime.

KEYWORDS

broken windows, community policing, crime hot spots, disorder, disorder policing, fear of crime, problem-oriented policing

1 | INTRODUCTION

U.S. homicide rates increased dramatically after the 2020 onset of the COVID-19 pandemic. Between 2019 and 2021, the homicide rate increased by more than 33%, from 5.1 homicides per 100,000 people to 6.8 per 100,000 people.¹ This increase was largely driven by a surge in gun violence as the proportion of homicide victims killed by gunshot grew to 79% (Kegler et al., 2022). Although homicide rates subsequently decreased to 6.3 per 100,000 in 2022, the rate was still higher than during any year over the past two decades. This interval of serious violence was accompanied by increased citizen fear. A 2023 Gallup poll found that 40% of Americans were afraid of walking alone at night within a mile of their home, the highest level in more than three decades (Saad, 2023). Respondents were also fearful about frequenting other places, with 34% stating that they avoid certain areas of the city or town they live in and 31% reporting that they avoid visiting central areas of nearby cities (Saad, 2023). These post-2020 changes occurred in a unique economic and political context with varying factors, such as pandemic-associated unemployment, de-policing in the wake of social justice protests, and recession-induced loss of public revenue, nominated as possible explanations for the heightened gun violence (e.g., see Braga & Cook, 2023; Schleimer et al., 2022).

Some observers have linked these surges in violence and citizen fear to increased disorder in major cities stemming from a reluctance to embrace "broken windows" policing (e.g., see Mangual, 2022; New York Post Editorial Board, 2023). The broken windows perspective posits that police can control more serious crimes when they focus on addressing underlying social and physical disorder problems (Wilson & Kelling, 1982). Although the available scientific evidence is mixed (Harcourt & Ludwig, 2006; Kelling & Sousa, 2001), increased misdemeanor arrests implemented as part of a broken windows policing strategy are popularly credited with large reductions in crime in New York City during the 1990s. However, a recent descriptive analysis suggests that a long-term retreat from arrests for disorder offenses, such as vagrancy, disorderly conduct, public drunkenness, and prostitution, set the conditions for the post-2020 surge in serious crime and citizen fear (Murray, 2023). Noting that these decreases happened well before the murder of George Floyd, Murray (2023) found that arrests for disorder offenses had fallen by 74% in New York City, 77% in Washington (DC), and 81% in Los Angeles since 2013. Driven by larger businesses pulling

out of office spaces and other businesses leaving urban centers after the pandemic, the presence of so-called "urban doom loops" in cities such as Boston, San Francisco, and New York City has further intensified policy discussions on the influence of policing on crime and disorder problems in public spaces (e.g., see Barkan, 2023; Carlton & Bindley, 2023; Nanos, 2023).

Supported by current Mayor Eric Adams, the New York City Police Department (NYPD) has once again embraced proactive policing strategies, including making "quality of life" arrests consistent with broken windows policing, to control rising crime and disorder in the city (Glueck & Southall, 2022). While premature, Mayor Adams and the NYPD claim that recent 2023 decreases in murders and shootings are associated with increased stops, summonses, and arrests (Bellafante, 2023). Others question the association between harsher enforcement tactics and reduced crime based on only 1 year of data while also voicing concerns about a return to problematic policing practices of the late 1990s and 2000s (Cramer & Mays, 2023). Studies suggest that the NYPD broken windows strategy of the past was associated with increased racial disparities in stops and arrests, enhanced burdens of criminal records for people living in disadvantaged neighborhoods, and a rise in abusive and unlawful encounters with NYPD officers (Fagan & Davies, 2000; Fagan et al., 2010; Jones-Brown et al., 2010).

An increase in police initiatives to address quality of life crimes has renewed the debate over the efficacy of and possible negative externalities associated with broken windows policing (Sanchez & Morales, 2022). The National Academies Committee on Proactive Policing (2018) concluded that available program evaluation evidence associated with broken windows approaches that relied on aggressive order maintenance strategies was mixed, while broken windows policing approaches that relied on community and problem-oriented policing strategies seemed to be effective. Much of the program evaluation evidence considered by the National Academies Committee (2018) was drawn from a now-dated systematic review of disorder policing (Braga et al., 2015). This article presents a much-needed update of the disorder policing systematic review. It includes an additional decade of new program evaluations and uses more appropriate effect size measures for studies that use count-based outcome measures for area units of analysis. The article begins with a brief review of the existing literature on broken windows and disorder policing. This is followed by a description of the methods of the systematic review and meta-analysis and presentation of the updated results. The concluding section explores implications for police innovation policy and criminological theory based on key results of the review.

2 | LITERATURE REVIEW

2.1 | Broken windows theory

In their highly influential *Atlantic Monthly* article "The Police and Neighborhood Safety: Broken Windows," Wilson and Kelling (1982) proposed a developmental sequence that connected escalating social and physical disorder problems in urban areas to more serious crime problems. Social incivilities included problem behaviors such as loitering, public drinking, vagrancy, and prostitution, while physical incivilities included environmental problems such as vacant lots, trash, graffiti, shattered glass, and abandoned buildings. Wilson and Kelling (1982) suggested that increasing social and physical disorder within neighborhoods caused residents and workers to be fearful. This fear drives people to abandon living and working in these places. The remaining individuals within these neighborhoods isolate themselves. This isolation increases anonymity and decreases the underlying capacity of residents to exert informal social control over public

places. The continued diffusion of disorder attracts more potential offenders, and the lack of control creates a permissive environment for serious criminal behavior. Wilson and Kelling (1982) argued that serious crime developed because the police and community members did not effectively collaborate to prevent urban decay. In later years, Kelling (2015) suggested that the broken windows perspective was simply a metaphor intended to inspire city officials, police leaders, and community members to control crime by addressing underlying disorderly conditions.

The theoretical links between disorder and subsequent fear of crime are supported by considerable scientific research (e.g., LaGrange et al., 1992; Ross & Jang, 2000; Skogan & Maxfield, 1981). However, the available evidence on the developmental disorder–crime sequence proposed by the broken windows perspective is mixed (Sousa & Kelling, 2019; Welsh et al., 2015). Some studies have found empirical support for the relationship between initial disorder and subsequent serious crimes (e.g., Freedman & Owens, 2011; Keizer et al., 2008; Ren et al., 2019), while others have found little to no support (e.g., Harcourt, 2001; O'Brien et al., 2019a, 2019b; Sampson & Raudenbush, 1999). Ongoing debate over the measurement of key concepts in broken windows theory has further clouded existing findings, with concerns raised over clear distinctions between crime and disorder measures (e.g., prostitution; see Gau & Pratt, 2008), how respondents may differ in their views of what constitutes disorderly behavior (Hinkle et al., 2023; Sampson & Raudenbush, 2004; Yang et al., 2018), and often absent or weak representations of the developmental sequence in theoretical tests (Taylor, 2001; Weisburd et al., 2015).

Differing perspectives on the findings of landmark theoretical studies have also contributed to the lack of certainty over the relationship between disorder and subsequent crime. Two examples are briefly described here. In the highly influential Disorder and Decline book, disorder was found to be significantly related to resident perceptions of crime problems in neighborhoods from six cities after controlling for poverty, residential stability, and racial composition (Skogan, 1990). What is more, drawing on data from 40 neighborhoods across multiple cities, Skogan found that social and economic factors had an indirect effect on robbery victimization that was mediated by neighborhood disorder. Using the same data sets, Harcourt (1998) dropped several neighborhoods with very strong disorder-crime relationships and found no connections between disorder and crime in the remaining neighborhoods. In response to the Harcourt (1998) re-analysis, several scholars noted that his findings did not actually challenge Skogan's (1990) results (see Eck & Maguire, 2006; Xu et al., 2005). Harcourt simply showed that Skogan's data were sensitive to outliers and the disorder-crime connection would have been strengthened if he chose to drop neighborhoods with weak disorder-crime relationships. Finally, Taylor (2001) noted that Skogan's (1990) analyses did not actually test the developmental sequence proposed by Wilson and Kelling (1982). Using longitudinal data from Baltimore neighborhoods, Taylor (2001) reported modest support for a causal relationship between disorder and subsequent serious crimes. However, he found that initial neighborhood status was a more powerful predictor of subsequent serious crimes.

A well-known analysis of systematic social observation data capturing social and physical incivilities on Chicago streets suggested that the relationship between disorder and subsequent crime was spurious (Sampson & Raudenbush, 1999). After controlling for neighborhood characteristics comprising concentrated disadvantage, racial composition, and collective efficacy,² the authors found that disorder was not significantly related to serious crimes except for robbery. Some critics noted that Sampson and Raudenbush (1999) mis-specified their analysis by not testing a model where neighborhood characteristics mediate the effects of disorder on crime instead of a model where disorder mediates the effects of neighborhood characteristics on crime (Jang & Johnson, 2001; Xu et al., 2005). Others raised methodological concerns with

the study, such as the decision to collect data on social disorder during morning hours (Sousa & Kelling, 2019). A subsequent mixed-methods study of robbery, drug, and assault hot spots in Chicago found support for both collective efficacy and the broken windows perspective in explaining crime clusters, but neither adequately explained crime variations within and across neighborhoods (St. Jean, 2007). Place characteristics and dynamics shaping crime opportunities in the Chicago hot spots were identified as more powerful influences on the observed crime concentrations.

Whether the escalation of disorder causes the subsequent development of more serious crime problems in the ways suggested by Wilson and Kelling (1982) remains uncertain. Studies consistently demonstrate strong correlations between disorder and crime in varied settings, but these established relationships often fall short of causation (O'Brien & Sampson, 2015; O'Brien et al., 2022). Perhaps, as suggested by Kelling (2015), the broken windows perspective should be regarded as a metaphor rather than a theory of crime causation. There are other complementary theoretical perspectives that may better explain the observed correlations between crime and disorder in specific contexts. Research on crime hot spots often reveals that disorder clusters in space and time with more serious crimes (e.g., see Braga & Bond, 2008; Braga et al., 1999; Weisburd et al., 1992). Crime opportunity theories, such as routine activities and rational choice,³ are commonly applied to understand the situational characteristics and dynamics that lead to crime concentrations at small geographical places (Braga & Clarke, 2014; Weisburd et al., 2012). Consistent with later writings that present broken windows as a tactic of community and problem-oriented policing (Kelling & Coles, 1996; Sousa & Kelling, 2019; Wilson & Kelling, 1989), disorder policing programs might be more appropriately rooted in crime opportunity theories that lead to problem-oriented interventions focused on identifiable risks at specific locations.

2.2 | Disorder policing to control crime as a policy intervention

Wilson and Kelling (1982) did not offer details on how to control crime by policing disorder. Rather, they presented general principles such as "the essence of the police role in maintaining order is to reinforce the informal control mechanisms of the community itself" (p. 34), and broad observations such as different neighborhoods have different capacities to manage disorder. They also raised concerns such as how to strike a balance between individual rights and community interests and argued for safeguards to ensure that police officers do not become "the agents of neighborhood bigotry" (p. 35). In their follow-up article, Wilson and Kelling (1989) highlighted the importance of community engagement when officers negotiate the rules of the street and linked broken windows to activities carried out by officers participating in community policing and problem-oriented policing programs. In their *Fixing Broken Windows* book, Kelling and Coles (1996) recognized a variety of actions as disorder policing, ranging from making misdemeanor arrests of "fare-beaters" jumping subway turnstiles in New York City to community problem-solving efforts to clean up public spaces in Boston and Baltimore. Broken windows policing seemed to capture any police-led attempt to control more serious crime by addressing underlying social and/or physical disorder problems.

Disorder policing strategies are now commonly used to control more serious crime by police departments in the United States, United Kingdom, Australia, and elsewhere in the world (Sousa & Kelling, 2019). Disorder policing strategies can vary across and within jurisdictions but tend to follow one of two basic orientations toward crime prevention (see, e.g., Cordner, 1998; Eck & Maguire, 2006; National Academies, 2018; Skogan, 2019). "Community" and "problem-oriented"

policing approaches attempt to reduce crime through collaboration with residents, governmental, and nongovernmental organizations to address recurring disorderly problems in public spaces. In contrast, "zero tolerance" and "quality of life" policing approaches control crime by embracing the strict enforcement of laws and ordinances against disorderly behavior. Community and problemoriented policing approaches involve arrests and court summonses; however, the emphasis is on community crime prevention and changing places. Aggressive order maintenance approaches (i.e., zero tolerance and quality of life policing) have a more singular focus on increasing misdemeanor arrests, summonses, and pedestrian stops to curtail persistent disorderly behavior in public areas.

Broken windows policing as a policy intervention was largely popularized by its association with large crime reductions in New York City during the course of the 1990s and into the 2000s. William Bratton implemented broken windows policing as part of a series of reforms to the NYPD, including the Compstat performance management system, increased efforts to halt illegal gun carrying, and other innovations, during his first stint as Police Commissioner between 1994 and 1996 (Bratton, 1998). With the support of former Mayors Rudy Giuliani and Michael Bloomberg, subsequent NYPD commissioners embraced the aggressive order maintenance aspects of the broken windows perspective, which was evident by a 54.8% increase in the misdemeanor arrest rate, from 2482 per 100,000 residents in 1993 to 3843 in 2013 (Patten et al., 2018). During this same period, violent crime rates fell by approximately 72%, from 1800 per 100,000 residents in 1993 to 500 in 2013. Although it is difficult to disentangle the effects of broken windows policing from other police reforms implemented at the same time (Eck & Maguire, 2006), as well as other factors such as an improved economy, increased incarceration, and immigration (Blumstein & Wallman, 2006), the NYPD has been credited as being at least partly responsible for these surprising crime reductions (see, e.g., Zimring, 2012). Empirical analyses of the impacts of broken windows policing in New York City, as measured by NYPD misdemeanor arrest rates, suggest a mix of findings, ranging from large (Corman & Mocan, 2005; Kelling & Sousa, 2001) to small (Messner et al., 2007; Rosenfeld et al., 2007) to null effects on crime (Greenberg, 2014; Harcourt & Ludwig, 2006).

The NYPD was also highly criticized for implementing what some saw as a one-dimensional, oppressive law enforcement regime that generated excessive harm to people living in and using public spaces in New York City. By 2000, smoking marijuana in plain view had become the most common misdemeanor arrest made by NYPD officers; Golub et al. (2007) found that most individuals arrested for marijuana smoking in plain view were Black or Hispanic and they were more likely to be detained, convicted, and sentenced than White arrestees. Similarly, pedestrian stops increased to more than 680,000 in 2011, with multiple empirical analyses showing excessive racial disparities in whom was being stopped by the NYPD (e.g., Fagan & Davies, 2000; Fagan et al., 2010; MacDonald & Braga, 2019). Increased misdemeanor arrests and stops by NYPD officers have been associated with police misconduct (Greene, 1999; Jones-Brown et al., 2010), the criminalization of homeless populations (Barr, 2002), poor academic outcomes for minority youth (Legewie & Fagan, 2019), and mental health trauma (Geller et al., 2014).

Consistent with the nonexperimental analyses of the NYPD broken windows strategy described above, the available program evaluation evidence of the effects of aggressive order maintenance disorder policing in other jurisdictions is mixed. For instance, a quasi-experimental evaluation found significant crime reductions associated with saturation patrols used to crackdown on social disorder connected to street drug dealing in a neighborhood in Newark, New Jersey (Piza & O'Hara, 2014). A large-scale quasi-experiment involving increased "broken windows" arrests at treated locations within 80 Colombian cities also reported significant crime reductions (Mejia

et al., 2022). In contrast, a randomized controlled experiment of broken windows policing in three towns in California (Redlands, Colton, and Ontario) found no significant effects on crime, fear of crime, or collective efficacy (Weisburd et al., 2012). A well-known study of a quality-of-life policing initiative focused on social and physical disorder in four target zones in Chandler, Arizona, also did not find any significant reductions in serious crime associated with the strategy (Katz et al., 2001).

The ongoing contentious debate over the positive and negative effects of broken windows policing led Wilson and Kelling to further clarify the idea in multiple writings (Kelling, 2015; Kelling & Wilson, 2006; see also Sousa & Kelling, 2019). They argued that broken windows did not require the police to make numerous arrests as claimed by many of their critics (and they explicitly noted that their writings never used the term "zero tolerance") and emphasized that the idea of disorder policing was best understood as a tactic of community and problem-oriented policing. Wilson and Kelling often pointed to randomized experiments testing the effects of problemoriented policing strategies addressing physical and social disorder in crime hot spots in Jersey City, New Jersey (Braga et al., 1999), and Lowell, Massachusetts (Braga & Bond, 2008), as strong evidence of the crime prevention impact of disorder policing. Other studies were supportive of their position. For instance, a randomized experiment found that code enforcement intervention that required property managers to address disorder at problem apartment complexes in San Diego, California, resulted in a 60% crime reduction (Eck & Wartell, 1998). Similarly, a randomized experiment of a police-led civil remedies program designed to clean up disorderly conditions and drug problems at single family homes, apartment complexes, and businesses in Oakland, California, reported significant reductions in drug calls at treatment locations relative to control locations (Green-Mazerolle et al., 2000).

A growing body of public health research also supports the idea that crime can be prevented by cleaning up disorderly conditions in urban areas (MacDonald et al., 2019). For example, a cluster randomized field experiment in Philadelphia randomly assigned vacant lots to one of three conditions: (1) a greening intervention; (2) a less-intensive mowing and trash cleanup intervention; or (3) no intervention. The vacant lots assigned to the greening intervention had trash and debris removed, the land graded, new grass and trees planted to create a park-like setting, wooden perimeter fences installed, and routine maintenance (Branas et al., 2018; Moyer et al., 2019). The experimental analyses found that, relative to the no-intervention comparison vacant lots, the greening intervention reduced shootings by almost 7% while the mowing and trash cleanup intervention reduced shootings by 9%. The researchers speculated that vacant lot remediation encouraged residents to use these public spaces for recreation and socialization and discouraged illegal activities such as drug dealing and disorderly behavior. In turn, the increased guardianship of public spaces generated by residents reduced opportunities for altercations that resulted in shootings. Although the tested intervention did not involve the police, the transformation of public spaces from blighted, violent environments to safe orderly places is consistent with the basic premise of broken windows, especially when framed as a community and problem-oriented policing tactic.

The National Academies' Committee on Proactive Policing (2018) concluded that broken windows policing strategies that rely on generalized increases in misdemeanor arrests (consistent with zero tolerance and aggressive order maintenance) have not been effective in controlling crime. However, the Committee also recognized that rigorous evidence existed that broken windows policing can be effective when applying community and problem-solving approaches to specific places. They further noted that it was difficult to disentangle the effects of other police crime prevention models, such as problem-oriented policing and hot spots policing, from the

reviewed broken windows evaluations. Their assessment drew insights from a now-dated Campbell Collaboration systematic review and meta-analysis of 30 tests from 28 controlled evaluations of disorder policing interventions completed prior to 2013 (Braga et al., 2015). Given pressing contemporary concerns over the growth of social and physical disorder in many U.S. cities and a growing interest for police to reduce crime by addressing underlying disorder problems, an updated systematic review and meta-analysis of disorder policing programs is warranted. City leaders and police executives need rigorous scientific evidence to guide their efforts to reduce crime by alleviating disorder in ways that maximize crime prevention benefits and avoid unintended consequences.

3 | METHODS

The systematic review protocols and conventions of the Campbell Collaboration guided our assessment of the impacts of disorder policing strategies on crime outcomes. Systematic reviews attempt to reduce bias when summarizing the empirical evidence on a specific topic, by identifying, assessing, and synthesizing all relevant studies using detailed, comprehensive, and replicable search strategy plans (e.g., see Higgins et al., 2023). The quantitative technique of meta-analysis is used to analyze results.

Meta-analysis uses specialized statistical methods to analyze the relationships between study features and outcomes (Lipsey & Wilson, 1993, 2001; Wilson, 2001). The size and direction (negative or positive) of the relationship found in a specific study (i.e., the magnitude of treatment effect observed) is represented by "effect size statistics." The effect size statistic is used to present the results of each study included in the overall meta-analysis of study findings. The "mean effect size" represents the average effect of treatment on the outcome of interest across all eligible studies. This metric is estimated by calculating a mean that is weighted by the precision of the effect size for each individual study. As will be described below, we use the log of the RIRR (relative incident rate ratio) effect size statistic in our meta-analysis of count-based outcomes reported for area units of analysis (Wilson, 2022).

3.1 | Criteria for inclusion and exclusion of studies in the review

Eligible studies had to evaluate policing programs designed to reduce crime by addressing associated disorder problems, such as physical incivilities (i.e., trash on the street, abandoned buildings, vacant lots with overgrown vegetation, graffiti, etc.) or social incivilities (i.e., public urination, drunkenness, visible drug dealing, prostitution, panhandling, loitering, etc.). Interventions included either aggressive disorder enforcement or community and problem-oriented policing explicitly designed to control crime by ameliorating disorder. Evaluations of stand-alone "stop, question, and frisk" (SQF) programs were not included in this review. SQF programs generally attempt to prevent more serious crimes through deterrence rather than by reducing social and physical disorder problems. For instance, many SQF programs attempt to deter gun violence by enhancing offender perceptions of apprehension risks associated with illegal gun carrying in public places through increased *Terry* stops (Rosenfeld et al., 2014; Sherman & Rogan, 1995).⁴

Studies that used comparison group designs, such as randomized controlled trials and quasiexperiments (Shadish et al., 2002), were eligible for inclusion in this review. Quasi-experiments

were required to have designs that included before and after measures of crime in treatment and control areas. In many controlled policing disorder evaluations (e.g., Berk & MacDonald, 2010), the control area experiences routine modern police responses to crime. Control areas usually experience a blend of traditional police responses (e.g., random patrol, rapid response, and adhoc investigations) and opportunistic community problem-solving responses. Although disorder interventions developed from community policing initiatives may be present in certain control areas, none of the control areas can involve disorder policing strategies as their main approach to address crime problems.

The units of analysis were limited to within-city areas and could range from small places (such as hot spots composed of clusters of street segments or addresses) to larger police defined areas (such as districts, precincts, sectors, or beats) to larger neighborhood units (such as census tracts or a researcher-defined area). Eligible studies had to measure the effects of the policing disorder intervention on officially recorded levels of crime in these areas. Appropriate crime measures included crime incident reports, citizen emergency calls for service, and arrests.

3.2 | Search strategies for identification of studies

In the previous iteration of the disorder policing review, searches identified eligible studies reported from 1982 to 2012. Our updated search includes those studies and eligible studies completed between 2013 and 2022. Five search strategies were used to perform an exhaustive search for literature meeting the eligibility criteria. First, a keyword search⁵ was performed on 16 online abstract databases.⁶ Second, we reviewed the bibliographies of past narrative and empirical reviews of the literature on the effectiveness of police crime control programs (Braga, 2008; Braga & Cook, 2023; Eck & Maguire, 2006; National Academies, 2018; Reisig & Kane, 2014; Sherman, 1997, 2002; Skogan & Frydl, 2004; Weisburd & Eck, 2004; President's Task Force on 21st Century Policing, 2015). Third, we conducted forward citation searches for works in which the original policing disorder systematic review (Braga et al., 2015) and seminal policing disorder studies were cited (Berk & MacDonald, 2010; Braga & Bond, 2008; Kelling & Coles, 1996; Kelling & Sousa, 2001; Wilson & Kelling, 1982). Fourth, bibliographies of published Campbell systematic reviews of police crime prevention efforts were searched (Bowers et al., 2011; Braga et al., 2019a; Braga et al., 2019b; Braga et al., 2019c; Hinkle et al., 2020; Koper & Mayo-Wilson, 2012; Lum et al., 2020; Mazerolle et al., 2007; Mazerolle et al., 2013). Fifth, hand searches were carried out of leading journals in the field.⁷

After completing these searches and reviewing the studies, the list of studies meeting our eligibility criteria was emailed (in early December 2023) to leading criminology and criminal justice scholars knowledgeable in disorder policing strategies. These 116 scholars were identified as those who authored at least one study among the studies that met our inclusion criteria, anyone involved with the National Academies of Sciences, Engineering, and Medicine (2018) review of proactive policing, or other leading scholars identified by the authors (list available upon request). This approach helped us identify unpublished studies that did not appear in conventional databases or other reviews. Fifth, we consulted with an information retrieval specialist at the outset of our review and at points along the way to ensure that we used appropriate search strategies to identify the studies meeting the criteria of this review. Two of the three authors independently coded each eligible study. Where there were discrepancies, all three authors jointly reviewed the study and determined the final coding decision.

3.3 | Statistical procedures and conventions

A standard meta-analytic approach to examine individual study effects and analyze overall program impacts on outcomes is to calculate the Cohen's *d* effect size measure (Lipsey & Wilson, 2001). However, the units of analysis in area-based crime prevention studies can be heterogeneous, ranging from small locations (e.g., street segments) to larger places (e.g., neighborhoods). The lack of a common unit means that Cohen's *d* metrics are not comparable across studies (Farrington & Welsh, 2013; Farrington et al., 2007; Wilson, 2022). Wilson (2022) recommends using the natural logarithm of the RIRR to represent program effects in evaluations that use place-based count data (see also Braga & Weisburd, 2022; Hinkle et al., 2020). The RIRR and the variance of the log RIRR was calculated from the raw pre-test and post-test counts from the treatment and control areas in the included studies using the following formulas (see Wilson, 2022):

> Pre Post Treatment a bControl c d

RIRR = (a * d)/(b * c)V (log RIRR) = (1/a) + (1/b) + (1/c) + (1/d)

The variance of the log of the RIRR (V(log RIRR)) was then adjusted for overdispersion (see Farrington et al., 2007). The overdispersion adjustment was calculated as the product of V(log RIRR) and D, with $D = 0.0008 \times N + 1.2$. In this formula, N is the mean number of incidents per case and is estimated as the total number of incidents (a + b + c + d) divided by the total number of treatment units plus control units. For those studies that reported sufficient information, a quasi-Poisson estimator for overdispersion was calculated.⁸

Biostat's Comprehensive Meta Analysis Version 2.2 was used to conduct the meta- analyses of log RIRR effect sizes for included disorder policing studies. The exponent of the natural log of the RIRR was used to represent the relative percent change in the treatment area compared to the control area by subtracting 1 from that value and multiplying by 100. This transformation is necessary to interpret the RIRR (as calculated in the formula above) as percent change in treatment areas relative to control areas (see Hinkle et al., 2020, p. 34). Moderator analyses to estimate the effects of research design and disorder policing program types on overall effect sizes were then conducted. Mean effect sizes for study effects on violent crime, property crime, and drug/disorder offense outcomes were also estimated.

Social science studies commonly report all relevant outcomes for evaluated programs without prioritizing a specific outcome to determine program effectiveness. Although authors view the presentation of multiple findings as good practice for identifying specific contexts in which the program is effective, this can result in the "creaming" of program findings by focusing only on the statistically significant finding and ignoring null findings of other outcomes. In the present meta-analysis, all studies for which a log RIRR could be calculated were analyzed using three approaches. (This also served as a sensitivity analysis to assess effects of input variation on output variation.) The first approach can be considered conservative: an overall mean effect size for each study that combined all reported outcomes was calculated. The second represents the largest effect reported in the studies and offers an upper bound to the review findings. Finally, the smallest effect size for each study was analyzed. This approach likely underestimates the effect of disorder

policing programs on crime. It was used here primarily to provide a lower bound to the review findings.

4 | RESULTS

Systematic review search strategies generate large numbers of citations and abstracts for potentially relevant studies that must be closely screened to determine whether the studies meet the eligibility criteria (Farrington & Petrosino, 2001). The screening process yields a much smaller pool of eligible studies for inclusion in the review. Combined with the results from the previous review, the search strategies produced slightly more than 18,100 total abstracts. The contents of these abstracts were reviewed for any suggestion of an evaluation of policing disorder strategies. A total of 547 distinct abstracts were then selected for closer review, and the full-text reports, journal articles, and books for these studies were acquired and carefully assessed to determine whether the interventions involved policing disorder strategies and whether the studies were randomized controlled trials or high-quality quasi-experiments. Fifty-six eligible studies were identified and included in the updated review, representing double the number of studies included in the previous review (28). A full list of the names of the included studies is presented here:

- 1. Newark Signs of Crime Program (Pate & Skogan, 1985a)
- 2. Newark Community Policing Program (Pate & Skogan, 1985b)
- 3. Southeastern City Foot Patrol Project (Esbensen, 1987)
- 4. New York Community Patrol Officer Program (McElroy et al., 1990)
- 5. Jersey City Drug Market Analysis Program (Weisburd & Green, 1995)
- 6. Dayton Traffic Enforcement Project (Weiss & Freels, 1996)
- 7. Milwaukee Weed and Seed Project (Zevitz et al., 1997)
- 8. San Diego Slumlords Project (Clarke & Bichler-Robertson, 1998)
- 9. San Diego Place Managers Project (Eck & Wartell, 1998)
- 10. Jersey City Problem-Oriented Policing Project (Braga et al., 1999)
- 11. Spokane Public Housing Project (McGarrell et al., 1999)
- 12. Midwestern City Disorder Project (Novak et al., 1999)
- 13. Chicago Nuisance Abatement Program (Higgins & Coldren, 2000)
- 14. Oakland Beat Health Program (Mazerolle et al., 2000)
- 15. Richmond Weed and Seed Initiative (Smith, 2001)
- 16. Wales Zero Tolerance Initiative (Rogers, 2002)
- 17. Detroit Antigang Initiative (Bynum & Varano, 2003)
- 18. St. Louis Antigang Initiative (Decker & Curry, 2003)
- 19. Jersey City Displacement Study (Weisburd et al., 2006)
- 20. Los Angeles Baldwin Safer Cities Initiative (Wagers, 2007)
- 21. Lowell Problem-Oriented Policing Project (Braga & Bond, 2008)
- 22. Lancashire Constabulary Policing Project (Lancashire Constabulary, 2008)
- 23. New Britain Weed and Seed Project (Costanza et al., 2010)
- 24. DDACTS Program in Washoe County (Beck, 2010)
- 25. Los Angeles Safer Cities Initiative (Berk & MacDonald, 2010)
- 26. Kansas City CSTAR Project (Guseynov, 2010)
- 27. Las Vegas Order Maintenance Project (Pace, 2010)
- 28. Boston Smart Policing Initiative (Braga et al., 2011)

- 30. Jacksonville Hot Spots Policing Project (Taylor et al., 2011)
- 31. Niagara County's Operation Panther Pride (Niagara County Sherriff, 2011)
- 32. Problem-Oriented Policing in Houston (Houston Police Department, 2012)
- 33. Los Angeles Suburbs Broken Windows Project (Weisburd et al., 2012)
- 34. Chula Vista Motel Initiative (Bichler et al., 2013)

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- 35. Lowell Smart Policing Initiative (Bond & Hajjar, 2013)
- 36. Palos Verdes Team Policing Project (Martinez, 2013)
- 37. DDACTS Program in Shawnee, Kansas (Bryant et al., 2014)
- 38. Policing Crime Hot Spots in Stockholm, Sweden (Marklund & Merenius, 2014)
- 39. Policing Crime Hot Spots in Eskilstuna, Sweden (Marklund & Merenius, 2014)
- 40. Operation Impact in Newark, New Jersey (Piza & O'Hara, 2014)
- 41. Colorado Springs PD's Risk-Based Intervention (Kennedy et al., 2015)
- 42. Newark PD's Risk-Based Intervention (Kennedy et al., 2015)
- 43. Kansas City PD's Risk-Based Intervention (Kennedy et al., 2015)
- 44. Glendale PD's Risk-Based Intervention (Kennedy et al., 2015)
- 45. St. Louis County Hot Spots in Residential Areas Study (Kochel et al., 2015)
- 46. Glendale Smart Policing Initiative (Dario, 2016)
- 47. St. Louis Gun Violence Project (Koper et al., 2016)
- 48. New Haven Smart Policing Initiative (Sedelmaier & Hipple, 2016)
- 49. Hot Spots Policing in Bogotá, Colombia (Blattman et al., 2017)
- 50. Investigating Hot Spots Policing in Copenhagen, Denmark (Attermann, 2017)
- 51. Unidentified Suburban Crime Response Team (Carson & Wellman, 2018)
- 52. Seattle Collaborative Problem-Solving Project (Gill et al., 2018)
- 53. Flint DDACTS Program (Rydberg et al., 2018)
- 54. Canton Intelligence Led Policing Intervention (Cooley et al., 2019)
- 55. Newark Substation Policing Intervention (Piza et al., 2020)
- 56. Columbia Broken Windows Program (Mejia et al., 2022)

4.1 | Characteristics of eligible policing disorder studies

The 56 eligible studies (*n*) included 59 independent tests (*k*) of disorder policing interventions.⁹ Table 1 presents a summary of the characteristics of the 59 independent tests. Most of the tests were conducted in the United States (k = 51; 86.4%) with the rest conducted in the United Kingdom (k = 3), Colombia (k = 2), Sweden (k = 2), and Denmark (k = 1). Disorder policing programs were tested in cities of varying sizes, ranging from small cities such as Shawnee, Kansas (approximately 67,000 residents; Bryant et al., 2014), to large cities such as New York City (nearly 8.5 million residents; McElroy et al., 1990). Eligible disorder policing tests were conducted in similar numbers of small (k = 17; 28.8%), medium (k = 21; 35.6%), and large (k = 21; 35.6%) cities. Most tests used quasi-experimental research designs (k = 47; 79.7%) relative to randomized controlled trials (k = 12; 20.3%). Community problem-solving strategies were most frequently applied to address underlying disorder problems in the included tests (k = 39; 66.1%), with aggressive order maintenance strategies representing 20 (33.9%) of the tests. More than half of the included disorder policing programs were tested at hot spot locations (k = 13; 22.1%). Nearly 47% (k = 28) of the tests were reported in unpublished technical reports, dissertations, or theses; the

Characteristic		k	Percentage
Evaluation country	United States	51	86.4
	United Kingdom	3	5.1
	Colombia	2	3.4
	Sweden	2	3.4
	Denmark	1	1.7
Population	Small (<200,000 residents)	17	28.8
	Medium (200,000-500,000 residents)	21	35.6
	Large (>500,000 residents)	21	35.6
Evaluation type	Randomized controlled trial	12	20.3
	Quasi-experimental design	47	79.7
Intervention	Community problem-solving strategy	39	66.1
	Aggressive order maintenance	20	33.9
Unit of analysis	Hot spot/micro-place	31	52.5
	Large police area (precinct, division, etc.)	15	25.4
	Neighborhood	13	22.1
Publication type	Peer-reviewed journal	26	44.1
	Unpublished technical report	21	35.6
	Dissertation/thesis	7	11.9
	Edited book chapter	4	6.7
	Published technical report (book)	1	1.7

TABLE 1 Key characteristics of eligible policing disorder tests (k = 59).

others (k = 31; 52.5%) were reported in traditional publications such as peer-reviewed journals and authored/edited books.

Table A1 in the Appendix (Supporting Information) summarizes the disorder policing interventions, research designs, units of analyses, and key evaluation findings for each included study. Slightly more than 71% (k = 42) of the included tests concluded that the disorder policing intervention generated a noteworthy crime reduction impact on at least one of the reported outcomes. Approximately one-quarter of the included tests reported null effects on all outcome measures (k = 15; 25.4%). Two tests (3.4%) reported adverse effects of the tested disorder policing intervention: the Wales Zero Tolerance Initiative (Rogers, 2002) observed a 6.3% increase in total crime incidents and the Palos Verdes Team Policing Project (Martinez, 2013) observed statistically significant increases in total and violent crime calls for service.¹⁰

Place-based policing strategies have been suggested to displace crime from targeted locations to unprotected areas (e.g., Reppetto, 1976). Most recently, scholars have recognized that place-based policing programs can generate larger than anticipated crime prevention impacts that spill over into surrounding areas (termed "diffusion of crime control benefits"; Clarke & Weisburd, 1994). In the present review, there were 30 tests of crime displacement and diffusion of crime control benefits effects conducted in the 56 included studies. The reported results included: no crime displacement or diffusion effects (k = 10; 33.3%); evidence of crime displacement effects only (k = 14; 46.7%); mixed displacement and diffusion effects (k = 3; 10%); and crime displacement effects only (k = 3; 10%).

Study name	Outcome				Log	g risk ratio a	and 95%	CI
	ri	Log sk ratio <i>p</i>	-Value					
Clarke & Bichler-Robertson, 1998	Total calls	1.882	0.000		1	1	-	- 1
Bynum & Varano, 2003 - 9th Precinct	Combined	1.126	0.000					
Niagara County Sherriff, 2011	Total crime incidents	0.854	0.109			+		
Bichler et al., 2013	Total calls	0.821	0.000					
Bynum & Varano, 2003 - 4th Precinct	Combined	0.813	0.069					
Piza & O'Hara, 2014	Violent incidents	0.641	0.466					-
Braga et al., 2011	Violent incidents	0.620	0.000			i		
Lancashire Constabulary, 2008	Combined	0.618	0.000			i		
Enfield Police Department, 2011	Burglary incidents	0.610	0.005			-	-	
McGarrell et al., 1999	Robbery & Burglary incidents	0.531	0.065			- Hi	-	
Mazerolle et al., 2000	Drug calls	0.507	0.158				— I	
Bryant et al. 2014	Total incidents	0.439	0.067				- 1	
Kennedy et al. 2015 - Newark	Gun violent incidents	0.431	0 705					_
Sedelmaier & Hipple 2016	Total incidents	0.428	0 729		_			
Kennedy et al. 2015 - Colorado Springs	MV theft incidents	0.403	0.695					_
Zevitz et al. 1997	Combined	0.363	0.005				.	
Berk & MacDonald 2010	Combined	0.347	0.012				.	
Gillet al. 2018 - Retail St	Combined	0.330	0.346					
Braga & Bond 2008	Total calls	0.265	0.040					
Braga et al. 1999	Combined	0.200	0.636					
Diaga et al., 1999	Combined	0.200	0.030					
Fiza et al., 2020 Markhund & Maranius, 2014 Eskilatuna	Assault insidents	0.241	0.077					
Cooley et al. 2010	Assault incluents	0.104	0.700					
Wegers 2008	Total index arims insidents	0.101	0.415				-	
Costenza et al. 2010	Total index crime incidents	0.160	0.010				_	
Dese, 2010	Total calls	0.160	0.517					
Pace, 2010	Combined	0.157	0.414			E	.	
Guseynov, 2010	Tatal calle	0.154	0.301			E		
Darlo, 2016	lotal calls	0.149	0.187			=		
Marklund & Merenius, 2014 - Stocknolm	Robbery Incidents	0.148	0.664				-	
Eck & Wartell, 1998	Combined	0.147	0.645				-	
Higgins & Coldren, 2000	Compined	0.143	0.487				.	
Rydderg et al., 2018	Violent incidents	0.139	0.930			E		
Kennedy et al., 2015 - Kansas City	Violent incidents	0.133	0.896			<u>E</u>		
Bond & Hajjar, 2013	Property incidents	0.131	0.678				-	
Houston Police Department, 2012	Total crime incidents	0.105	0.829				_	
Kochel et al., 2015 - POP	lotal calls	0.083	0.913					
Decker & Curry, 2003	Total index crime incidents	0.076	0.340					
Pate & Skogan, 1985b	Total incidents	0.052	0.748					
Attermann, 2017	Total incidents	0.051	0.802					
Pate & Skogan, 1985a	Total incidents	0.014	0.931			.		
McElroy et al., 1990	Total calls	0.010	0.468					
Smith, 2001	Total calls	0.001	0.996			T		
Weisburd & Green, 1995	Combined	-0.006	0.984				-	
Weiss & Freels, 1996	Combined	-0.011	0.973				-	
Taylor et al., 2011 - POP	Combined	-0.022	0.958				-	
Gill et al., 2018 - Westlake	Combined	-0.033	0.923				-	
Weisburd et al., 2012	Total calls	-0.046	0.907				-	
Beck, 2010	Combined	-0.123	0.863				_	
Novak et al., 1999	Combined	-0.128	0.594			-		
Esbensen, 1987	Total incidents	-0.297	0.398					
Koper et al., 2016	Combined	-0.326	0.041					
Rogers, 2002	Total incidents	-0.346	0.026					
Kennedy et al., 2015 - Glendale	Robbery incidents	-0.513	0.713					·
Martinez, 2013	Total calls	-0.583	0.001					
		0.233	0.000					
				-4.00	-2.0	0 0.00	2.0	4.00
					Favors o	ontrol	Favore tr	eatment

FIGURE 1 Main effects meta-analysis of disorder policing studies. N = 54 tests from 52 included studies. Random effects model used. Log RIRR = 0.233, Z = 4.125, p < 0.001, 95% CI [0.122, 0.344]. Q = 306.830, df = 53, p < 0.0001, $I^2 = 82.727$.

4.2 | Meta-analysis of effects on crime and disorder

Fifty-two studies representing 54 tests of disorder policing interventions provided the necessary pre-test and post-test crime counts for the treatment and control areas to allow for the calculation of the log RIRR and V(log RIRR). One of these studies, the Los Angeles Safer Cities Initiative evaluation (Berk & MacDonald, 2010), did not report these data but the authors provided the IRR and its standard error. The four studies that did not include enough information to calculate appropriate effect size metrics reported mixed crime reduction impacts for the disorder policing programs.¹¹ The 52 disorder policing studies and 54 tests of disorder policing interventions accounted for 92.9% of the 56 studies and 91.5% of the 59 tests identified in our systematic review. Further, 22 of the



Crime type	K	Log RIRR	95% CI
Violent	29	0.210*	[0.051, 0.369]
Property	20	0.271*	[0.081, 0.460]
Disorder/Drug	12	0.214*	[0.125, 0.303]
Total	54	0.233*	[0.122, 0.344]

TABLE 2 Effects of disorder policing programs on specific types of crime outcomes.

Note: Random effects meta-analysis models used in all reported effect sizes.

*p < 0.05.

30 tests (73.3%) of crime displacement and diffusion of crime control benefits effects reported the necessary information to calculate log RIRR and V(log RIRR).

Our meta-analysis used a random effects model to estimate the overall log RIRR effect of disorder policing on crime outcomes.¹² Using the estimated total effect size from each study for 54 main effects tests, the forest plots in Figure 1 shows the log RIRR effect size (representing the difference between the treatment and control conditions) plus its 95 percent confidence interval. Points plotted to the right of zero indicate a treatment effect; in this case, the test showed a reduction in crime. Points to the left of zero indicate a backfire effect. The meta-analysis suggests a statistically significant effect in favor of disorder policing strategies. The overall effect size (log RIRR) = 0.233 (p < 0.001; 95% CI [0.122, 0.344]), suggesting that disorder policing was associated with a 26.2% reduction in crime outcomes in treatment areas compared to control areas.

For the largest effect size meta-analysis, the overall log RIRR was 0.350, suggesting a 41.9% reduction in crime outcomes in treatment areas compared to control areas (p < 0.001; 95% CI [0.223, 0.477]).¹³ For the smallest effect size meta-analysis, the overall log RIRR was 0.155, suggesting a 16.8% reduction in crime outcomes in treatment areas compared to control areas (p < 0.01; 95% CI [0.037, 0.272]).¹⁴ Table 2 presents log RIRR effect sizes for the effects of disorder policing programs on violent crime, property crime, and drug/disorder offense outcomes. Disorder policing programs produced statistically significant (p < 0.05) positive log RIRR effect sizes for all outcomes, including a 23.4% reduction in violent crime outcomes (0.210; 95% CI [0.051, 0.369]), 23.9% reduction in drug/disorder offense outcomes (0.214; 95% CI [0.125, 0.303]), and 31.1% reduction in property offense outcomes (0.271; 95% CI [0.081, 0.460]).

A random effects model examined crime displacement and diffusion impacts for 22 policing disorder tests that measured these outcomes. The forest plot in Figure 2 shows that the overall effect size favors a diffusion of crime control benefits impact over a crime displacement impact, with the log RIRR suggesting a statistically significant 24.1% reduction in crime outcomes in areas proximate to treated locations relative to areas proximate to control locations (0.216, *p* < 0.001; 95% CI [0.117, 0.314]).¹⁵

Given the important distinction in methodological quality between the randomized controlled trials and quasi-experimental evaluation studies, research design was examined as a moderator variable. Moderator variables help to explain and understand differences across studies in the outcomes observed (Lipsey & Wilson, 2001). Research design could be an influential moderator of the observed effect sizes in our meta-analysis. Figure 3 presents a random effects model examining the two different evaluation designs included in this review.¹⁶ The 43 quasi-experimental tests were associated with a somewhat larger within-group effect size (log RIRR = 0.252, p < 0.05; 95% CI [0.123, 0.381]) relative to the 11 randomized experimental tests (log RIRR = 0.206, p < 0.05; 95% CI [0.077, 0.336]). When research design type was included as a moderator, the meta-analysis estimated a similar overall effect size (log RIRR = 0.229, p < 0.05; 95% CI [0.138, 0.321]). There is

Study name	Outcome	Statistics	for each	study		Loa	risk ratio an	d 95% CI		
		Log S	tandard							
		risk ratio	error	<i>p</i> -Value						
Bichler et al., 2013	Total calls	0.812	0.104	0.000		1				
Lancashire Constabulary, 2008	Combined	0.552	0.161	0.001				·		
Weisburd & Green, 1995	Combined	0.513	0.076	0.000						
Piza & O'Hara, 2014	Total violent incidents	0.420	0.401	0.295				-		
Kennedy et al., 2015 - Newark	Gun violence incidents	s 0.314	0.317	0.322				.		
Smith, 2001	Total calls	0.306	0.091	0.001						
Mazerolle et al., 2000	Drug calls	0.292	0.064	0.000						
Berk & MacDonald, 2010	Total crime incidents	0.250	0.046	0.000						
Kennedy et al., 2015 - Colorado Springs	MV theft incidents	0.240	0.273	0.379						
Esbensen, 1987	Total incidents	0.218	0.214	0.310			- +			
Braga et al., 1999	Total calls	0.196	0.041	0.000						
Dario, 2016	Total calls	0.172	0.063	0.006						
Enfield Police Department, 2011	Burglary incidents	0.081	0.116	0.486						
Rogers, 2002	Combined	0.062	0.307	0.839			-			
Costanza et al., 2010	Total calls	0.045	0.294	0.878			-			
Braga & Bond, 2008	Total calls	0.023	0.050	0.646						
Braga et al., 2011	Violent incidents	0.017	0.031	0.583						
Novak et al., 1999	Combined	-0.012	0.260	0.962			-			
Marklund & Merenius, 2014 - Stockholm	Robbery incidents	-0.019	0.214	0.929			-			
Tayloretal., 2011 - POP	Combined	-0.091	0.304	0.765			-			
Piza et al., 2020	Combined	-0.100	0.662	0.880			_	-		
Martinez, 2013	Total calls	-0.296	0.186	0.112						
		0.216	0.050	0.000			•			
					-5.00	-2.50	0.00	2.50)	5.00
					F	avors displa	cement	Favors di	ffusion	

FIGURE 2 Meta-analysis of displacement and diffusion effects of disorder policing studies. N = 22 tests from 30 included studies. Random effects model used. Log RIRR = 0.216, Z = 4.302, p < 0.001, 95% CI [0.117, 0.314]. Q = 116.835, df = 21, p < 0.001, $I^2 = 82.026$.

evidence that use of quasi-experimental designs in crime prevention evaluations tend to overstate outcomes in comparison with randomized experiments (Weisburd et al., 2001; Welsh et al., 2011). However, the purported relationship between quasi-experimental designs and larger effect sizes is not equivocal (see, e.g., Shadish & Ragsdale, 1996).

4.3 | Program type as effect size moderator

Our review documented that broken windows policing programs have adopted community problem-solving programs and aggressive order maintenance programs to control crime. Community problem-solving programs typically involve a combination of collaborations with community stakeholders and problem analyses to identify creative solutions to reducing disorder at public places. Aggressive order maintenance programs often rely exclusively on the intensive enforcement of social disorder as the singular treatment to reduce disorder at places. There can be, of course, some overlap between these two main intervention approaches. However, these two approaches represent fundamentally different orientations in dealing with physical and social disorder.

Figure 4 presents a random effects model examining the two different program types: 35 tests of community problem-oriented policing and 19 tests of aggressive order maintenance policing.¹⁷ Our meta-analysis shows that community problem-oriented policing programs produce a larger overall effect (log RIRR = 0.286, p < 0.001; 95% CI [0.142, 0.430]), which is more than twice the size of the aggressive order maintenance policing overall effect (log RIRR = 0.090, *ns*; 95% CI [-0.077, 0.258]). This suggests that community problem-oriented policing programs were associated with a statistically significant 33.1% reduction in crime outcomes in treatment areas relative to control areas, while aggressive order maintenance programs were associated with a null effect.

Group by	Study name	Outcome				Log	risk ratio an	d 95% Cl	
Design		ri	Log sk ratio	<i>p</i> -Value					
Quasi	Clarke & Bichler-Robertson, 1998	Total calls	1.882	0.000	1	1	1		
Quasi	Bynum & Varano, 2003 - 9th Precinct	Combined	1.126	0.000			-		
Quasi	Niagara County Sherriff, 2011	Total crime incidents	0.854	0.109					
Quasi	Bichler et al., 2013	Total calls	0.821	0.000					
Quasi	Bynum & Varano, 2003 - 4th Precinct	Combined	0.813	0.069					
Quasi	Piza & O'Hara, 2014	Violent incidents	0.641	0.466					·
Quasi	Braga et al., 2011	Violent incidents	0.620	0.000					
Quasi	Lancashire Constabulary, 2008	Combined	0.618	0.000			🖷	·	
Quasi	Enfield Police Department, 2011	Burglary incidents	0.610	0.005				-	
Quasi	McGarrell et al., 1999	Robbery & Burglary incidents	0.531	0.065				-	
Quasi	Bryant et al., 2014	Total incidents	0.439	0.067				·	
Quasi	Kennedy et al., 2015 - Newark	Gun violent incidents	0.431	0.705					-
Quasi	Sedelmaier & Hipple, 2016	Total incidents	0.428	0.729					-
Quasi	Kennedy et al., 2015 - Colorado Springs	MV theft incidents	0.403	0.695					-
Quasi	Zevitz et al., 1997	Combined	0.363	0.005					
Quasi	Berk & MacDonald, 2010	Combined	0.347	0.012					
Quasi	Piza et al., 2020	Combined	0.241	0.677				-	
Quasi	Marklund & Merenius, 2014 - Eskilstuna	Assault incidents	0.184	0.766				-	
Quasi	Cooley et al., 2019	Combined	0.181	0.415					
Quasi	Wagers, 2008	Total index crime incidents	0.165	0.016					
Quasi	Costanza et al., 2010	Total calls	0.160	0.517					
Quasi	Pace, 2010	Combined	0.157	0.414					
Quasi	Guseynov, 2010	ndex incidents	0.154	0.381					
Quasi	Dario, 2016	Total calls	0.149	0.187			=		
Quasi	Marklund & Merenius, 2014 - Stockholm	Robbery incidents	0.148	0.664					
Quasi	Higgins & Coldren, 2000	Combined	0.143	0.487					
Quasi	Rydberg et al., 2018	Violent incidents	0.139	0.930					
Quasi	Kennedy et al., 2015 - Kansas City	Violent incidents	0.133	0.896					
Quasi	Bond & Hajjar, 2013	Property incidents	0.131	0.678					
Quasi	Houston Police Department, 2012	Total crime incidents	0.105	0.829				-	
Quasi	Decker & Curry, 2003	Total index crime incidents	0.076	0.340			- 2		
Quasi	Pate & Skogan, 1985b	Total incidents	0.052	0.748					
Quasi	Pate & Skogan, 1985a	Total incidents	0.014	0.931			- T		
Quasi	McElroy et al., 1990	Total calls	0.010	0.468			- I		
Quasi	Smith, 2001	I otal calls	0.001	0.996			- T		
Quasi	Weiss & Freels, 1996	Combined	-0.011	0.973					
Quasi	Beck, 2010	Combined	-0.123	0.863				-	
Quasi	Novak et al., 1999	Combined	-0.128	0.594					
Quasi	Espensen, 1987	I otal incidents	-0.297	0.398					
Quasi	Koper et al., 2016	Combined	-0.326	0.041					
Quasi	Kogers, 2002	Palahan incidents	-0.340	0.020					
Quasi	Medieee 2012	Total calls	-0.513	0.713					
Quasi	Marunez, 2013	rotal calls	-0.565	0.001					
Quasi	Managarilla et al. 2000	Deve selle	0.202	0.000				_	
RCI	Gillet el 2019, Deteil Ch	Drug calls	0.007	0.100					
RCI	Gilletal, 2016 - Retail St.	Total calls	0.000	0.040				-	
RCI	Braga & BUIU, 2006	Combined	0.200	0.002				_	
RCI	Diaga et al., 1999	Combined	0.200	0.030				-	
DOT	Eck & Wartell, 1990	Total calls	0.147	0.045					
PCT	Attormoon 2017	Total incidents	0.0051	0.010					
RCT	Weishurd & Green 1995	Combined	_0.001	0.002					
RCT	Taylor et al. 2011 - POP	Combined	-0.000	0.004					
PCT	Gillet al. 2018 Westlake	Combined	-0.022	0.900					
PCT	Weichurd et al. 2012	Total calls	0.046	0.023					
PCT	weisburg et al., 2012	rotar cells	-0.040	0.002					
Overall			0.200	0.002			X		
ovoidi			0.229	0.000	1 00	1	0.00	1	
					-4.00	-2.00	0.00	2.00	4.00
						Favors control	5I	Favors tr	eatment

FIGURE 3 Meta-analysis of the association of research design and crime outcomes for disorder policing studies. K = 11 randomized controlled trial tests and 43 quasi-experimental tests. Random effects model used. Quasi-experiment Log RIRR = 0.252, Z = 3.839, p < 0.001, 95% CI [0.123, 0.381]. Randomized controlled trial Log RIRR = 0.206, Z = 3.117, p < 0.01, 95% CI [0.077, 0.336]. Overall Log RIRR = 0.227, Z = 4.792, p < 0.001, 95% CI [0.134, 0.320]. Quasi-experiment Q = 298.697, df = 42, p < 0.001, $I^2 = 85.9939$. Randomized controlled trial Q = 12.655, df = 10, p < 0.001, $I^2 = 56.171$. Between group Q = 4.478, df = 1, p < 0.05.

Problem-oriented policing and hot spots policing programs have been noted to generate significant crime control benefits (e.g., see Braga & Weisburd, 2022; Hinkle et al., 2020; National Academies, 2018). What is more, hot spots policing programs that use problem-oriented policing interventions to control high-activity crime places have generally been shown to produce larger crime control impacts relative to increased traditional policing actions at crime hot spots (e.g., see Braga & Weisburd, 2010; Braga et al., 2019a). Table 3 presents an exploratory random effects analysis of the influence of disorder policing program type on crime control impacts when implemented in hot spot locations relative to larger areas, such as police districts and neighborhoods.¹⁸ Disorder policing programs are associated with crime reductions when applied to both hot spots and larger areas. However, disorder policing programs implemented at hot spots are associated with a much larger overall effect size (log RIRR = 0.358, p < 0.05) when compared to disorder policing programs implemented in larger areas (log RIRR = 0.124, p < 0.05). In both hot spots

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Group by	Study name	Outcome				Log risk	ratio and 95% C		
Program Type			Log risk ratio	p-Value					
Aggressive Order	Bynum & Varano, 2003 - 9th Precinct	Combined	1.126	0.000	1	1	I	1	
Aggressive Order	Niagara County Sherriff, 2011	Total crime incidents	0.854	0.109					
Aggressive Order	Bynum & Varano, 2003 - 4th Precinct	Combined	0.813	0.069			╞╼╋╾╴│		
Aggressive Order	Piza & O'Hara, 2014	Violent incidents	0.641	0.466					
Aggressive Order	Bryant et al., 2014	Total incidents	0.439	0.067					
Aggressive Order	Piza et al., 2020	Combined	0.241	0.677					
Aggressive Order	Costanza et al., 2010	Total calls	0.160	0.517			-		
Aggressive Order	Pace, 2010	Combined	0.157	0.414			- H		
Aggressive Order	Marklund & Merenius, 2014 - Stockholm	Robbery incidents	0.148	0.664					
Aggressive Order	Rydberg et al., 2018	Violent incidents	0.139	0.930				-	
Aggressive Order	Decker & Curry, 2003	Total index crime incidents	0.076	0.340					
Aggressive Order	Smith, 2001	Total calls	0.001	0.996			÷ 1		
Aggressive Order	Weiss & Freels, 1996	Combined	-0.011	0.973					
Aggressive Order	Beck, 2010	Combined	-0.123	0.863					
Aggressive Order	Novak et al., 1999	Combined	-0.128	0.594					
Aggressive Order	Esbensen, 1987	Total incidents	-0.297	0.398					
Aggressive Order	Koper et al., 2016	Combined	-0.326	0.041					
Aggressive Order	Rogers, 2002	Total incidents	-0.346	0.026			-		
Aggressive Order	Kennedy et al., 2015 - Glendale	Robbery incidents	-0.513	0.713					
Aggressive Order			0.090	0.290			1 1 1		
CPOP/ Place	Clarke & Bichler-Robertson, 1998	Total calls	1.882	0.000			1 _ = 1		
CPOP/ Place	Bichler et al., 2013	Total calls	0.821	0.000					
CPOP/ Place	Braga et al., 2011	Violent incidents	0.620	0.000					
CPOP/ Place	Lancashire Constabulary, 2008	Combined	0.618	0.000					
CPOP/ Place	Enfield Police Department, 2011	Burglary incidents	0.610	0.005					
CPOP/ Place	McGarrell et al., 1999	Robbery & Burglary incidents	0.531	0.065					
CPOP/ Place	Mazerolle et al., 2000	Drug calls	0.507	0.158					
CPOP/ Place	Kennedy et al., 2015 - Newark	Gun violent incidents	0.431	0.705					
CPOP/ Place	Sedelmaier & Hipple, 2016	Total incidents	0.428	0.729				·	
CPOP/ Place	Kennedy et al., 2015 - Colorado Springs	MV theft incidents	0.403	0.695					
CPOP/ Place	Zevitz et al., 1997	Combined	0.363	0.005					
CPOP/ Place	Berk & MacDonald, 2010	Combined	0.347	0.012					
CPOP/ Place	Gill et al., 2018 - Retail St.	Combined	0.330	0.346					
CPOP/ Place	Braga & Bond, 2008	Total calls	0.265	0.002					
CPOP/ Place	Braga et al., 1999	Combined	0.260	0.636					
CPOP/ Place	Marklund & Merenius, 2014 - Eskilstuna	Assault Incidents	0.184	0.766					
CPOP/ Place	Cooley et al., 2019	Combined	0.181	0.415					
CPOP/ Place	wagers, 2008	Total index crime incidents	0.165	0.016			- E - L		
CPOP/ Place	Guseynov, 2010	Index Fincidents	0,154	0,381			E		
CPOP/ Place	Dano, 2016	Total calls	0.149	0.187			- E - I		
CPOP/ Place	Eck & Wartell, 1998	Combined	0.147	0.645					
OPOP/ Place	Higgins & Coldren, 2000	Combined	0.143	0.467			E		
CPOP/ Place	Rennedy et al., 2015 - Kansas City	Violent incidents	0.133	0.896					
CPOP/ Place	Bond & Hajjar, 2013	Total arises insidents	0.105	0.070					
OPOP/ Place	Houston Police Department, 2012	Total crime incidents	0.105	0.029					
CPOP/ Place	Rochel et al., 2015 - POP	Total calls	0.063	0.913			I		
CPOP/ Place	Pale & Skogari, 19650	Total incidents	0.052	0.740			I		
CPOP/ Flace	Atternann, 2017	Total incidents	0.001	0.002			E I		
CPOP/ Place	MaEleviet al. 1000	Total incidents	0.014	0.931			T 1		
CPOP/ Place	Molehund & Grane 1005	Combined	0.010	0.400			- X		
CPOP/ Place	Taylor at al. 2011 POP	Combined	-0.000	0.059	1	· · · ·	I	I	
CROP/ Place	Cillet el 2018 Westleke	Combined	-0.022	0.908		·	I		
CPOP/ Place	Moisburd at al. 2012	Total calla	-0.033	0.923		· · · ·	T	I	
CDOD(Place	Weisburd et al., 2012 Martinez, 2012	Total calls	-0.040	0.001					
CROB(Place	warunez, 2013	rotar cells	0.003	0.000		ין	= I_ I	I	
Or OP/ Place			0.200	0.000				I	
Overall			0,203	0.000	1		17 1		
					-5.00	-2.50	0.00 2.5	u 5.00	
						Favors control	Favors tr	eatment	

FIGURE 4 Meta-analysis of the association of intervention strategies and crime outcomes for policing disorder studies. N = 19 aggressive order maintenance tests and 35 community problem-oriented policing tests. Random effects model used. Aggressive order maintenance Log RIRR = 0.090, Z = 1.059, p = 0.290, 95% CI [-0.077, 0.258]. Community problem-oriented policing Log RIRR = 0.286, Z = 3.883, p < 0.001, 95% CI [0.142, 0.430]. Overall Log RIRR = 0.203, Z = 3.632, p < 0.001, 95% CI [0.093, 0.312]. Community problem-oriented policing Q = 270.571, df = 34, p < 0.001, $I^2 = 87.434$; $\tau^2 = 0.113$, SE = 0.083, $\tau = 0.336$. Aggressive order maintenance Q = 35.822, df = 18, p < 0.01, $I^2 = 49.752$; $\tau^2 = 0.050$, SE = 0.041, $\tau = 0.224$. The between group Q = 8.417, df = 1, p < 0.05.

TABLE 3	Effects of area types and	program types	on crime outcomes
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Area type/program type	К	Log RIRR	95% CI
Hot spots	26	0.358*	[0.144, 0.572]
Community problem-oriented	22	0.368*	[0.392, 0.552]
Aggressive order maintenance	4	0.175	[-0.421, 0.771]
Large areas	28	0.124*	[0.021, 0.228]
Community problem-oriented	13	0.166*	[0.021, 0.311]
Aggressive order maintenance	15	0.092	[-0.091, 0.275]

Note: Random effects meta-analysis models used in all reported effect sizes. *p < 0.05.

Funnel Plot of Standard Error by Log risk ratio

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FIGURE 5 Funnel plot for all eligible studies with imputed studies from trim-and-fill analysis. Empty circles represent the included studies.

and larger areas, aggressive order maintenance programs were not associated with statistically significant crime control impacts. In contrast, community problem-oriented policing programs were associated with large crime reduction impacts when implemented in crime hot spots (log RIRR = 0.368, p < 0.05) and more modest impacts when implemented in larger areas, such as neighborhoods and police districts (log RIRR = 0.166, p < 0.05).

4.4 | Publication bias

Publication bias presents a serious challenge to any review of evaluation studies (Rothstein, 2008). Our extensive search procedures, the use of an information retrieval specialist, and the mobilization of an extensive network of police scholars made it unlikely that relevant unpublished works would remain hidden from this review. Indeed, 48.1% (k = 26) of the included tests of disorder policing programs came from "grey literature" sources, such as unpublished reports and dissertations. We used the trim-and-fill procedure (Duval & Tweedie, 2000) to estimate the effect of potential data censoring, such as publication bias, on the meta-analytic results. The diagnostic funnel plot is based on the idea that, in the absence of bias, the plot of study effect sizes should be symmetric about the grand mean (log RIRR) effect size. If there is asymmetry, the trim-and-fill procedure imputes the missing studies, adds them to the analysis, and then re-computes the grand mean (log RIRR) effect size. A random effects model was used to estimate the overall log RIRR effect size (Q = 306.830, df = 53, p < 0.001). A visual inspection of the resulting funnel plot in Figure 5 indicated symmetry with no additional studies added. The overall log RIRR effect size remained the same (log RIRR = 0.233; 95% CI [0.122, 0.344]). This suggests that publication bias did not influence our findings.

5 | DISCUSSION AND CONCLUSIONS

The results of this updated systematic review strongly support the view that police can prevent crime by addressing underlying social and physical disorder problems. The main effects meta-analysis suggests that disorder policing was associated with a statistically significant 26% reduction in crime outcomes in treatment areas compared to control areas. Similar statistically significant reductions were noted for effects of disorder policing programs on violent crime, property crime, and drug/disorder offense outcomes. Disorder policing interventions also did not displace crime into areas surrounding treated locations. For those studies that examined crime displacement and diffusion effects, the meta-analysis reported a 24% reduction in crime outcomes in areas adjacent to treated locations relative to areas adjacent to control locations. This suggests that police efforts to control disorder in specific public places generate unanticipated crime prevention benefits in locations not directly treated by the intervention (see also Clarke & Weisburd, 1994; Weisburd et al., 2006).

The results presented here provide important insights on disorder policing policies and practices. Consistent with the previous review, community problem-oriented policing programs generated statistically significant and large reductions in crime in treated areas relative to control areas, and aggressive order maintenance programs did not generate significant crime control gains. Disorder policing programs that embrace "zero tolerance" regimes requiring increased arrests, summonses, and stops do not seem well-positioned to increase public safety. Rather, as suggested by a large and growing scientific evidence base (National Academies, 2018), aggressive order maintenance programs risk generating unintended harms, such as racial disparities in police contacts with citizens, excessive punishment of young people of color, unlawful and abusive police-citizen encounters, and other deeply concerning problems. Police departments should avoid these kinds of one-dimensional enforcement strategies when seeking to create safer public spaces.

Moderator analyses further showed that disorder policing programs generate even stronger crime prevention benefits when focused on smaller "hot spot" locations compared to interventions implemented in large policing units and neighborhoods. Community problem-oriented policing programs that addressed disorderly conditions at small places generated an almost 45% reduction in crimes relative to the approximately 20% reduction generated by similar interventions across larger areas. This finding is consistent with the existing hot spots policing literature, which suggests that problem-oriented policing efforts (i.e., to address underlying conditions that cause crime to concentrate at specific places) produce larger crime reductions relative to increased traditional policing interventions such as heightened levels of patrol (Braga & Weisburd, 2010; Braga et al., 2019a). This result also provides important guidance to police departments looking to create safer public spaces through disorder policing. These interventions seem to perform best when concentrated at the places that actually need such attention and by changing place dynamics rather than simply applying strict enforcement to people who reside in and use those public spaces.

The results of this systematic review and meta-analysis lend further support for the need for policing disorder interventions to be guided by a "community co-production model" rather than the zero-tolerance policing model, the latter focused on a subset of social incivilities, such as drunken people, rowdy teens, and street vagrants, and seeks to remove them from the street via arrest (Taylor, 2001). Police officers are highly reliant on residents, municipal agencies, nonprofit organizations, and other organizations when dealing with the full range of social and physical disorder problems. Stable relationships with the community and responsiveness to local concerns are needed to reduce incivilities (Taylor, 2001). Strict enforcement efforts that

increase misdemeanor arrests, summons issuances, and pedestrian stops seem likely to strain police–community relationships in disadvantaged minority neighborhoods where distrust of the police is high but the need for community co-production of public safety is profound (Brunson, 2007; Skogan & Frydl, 2004).

Wilson and Kelling (1989) eventually clarified what it meant to fix broken windows, by explicitly noting that dealing with disorder should be viewed as a tactic of community policing rather than a one-size-fits-all response to crime problems. Community policing requires police departments to engage residents in defining and addressing local crime and disorder problems, decentralize decision-making authority on crime and disorder control tactics to line-level officers, and promote problem-solving techniques to guide the design of appropriate crime prevention strategies (Skogan, 2019). Community policing interventions generate positive effects on citizen satisfaction, police legitimacy, and disorder perceptions (Gill et al., 2014), and can guide officer decisions on disorder policing tactics based on local community needs. Problem-oriented policing yields more nuanced responses through the analysis of crime and disorder problems at specific places (Eck & Spelman, 1987; Goldstein, 1990). As part of this process, police officers will need to develop strong working relationships with local communities and know the key actors who exert positive and negative influence over behavior in public spaces. Misdemeanor arrests and summonses for disorderly behavior could be part of an appropriate place-based response to disorder depending on local context. However, these tactical decisions should be made in consultation with local communities and, as such, be oriented to avoid indiscriminate and overly aggressive enforcement actions that characterize zero tolerance approaches.

This review was not designed to test broken windows as a theory of crime causation. As described earlier, the available evidence on the theoretical links among disorder, fear, informal social control, and more serious crime in neighborhoods is mixed. A review by Weisburd et al. (2015) suggests that very few evaluations of disorder policing programs have tested the developmental sequence suggested by Wilson and Kelling (1982), and for those that have done so, there is little evidence that reducing disorder diminishes fear or enhances community social controls. The most effective programs included in this review involved focused police attention to crime and disorder problems in small hot spots areas. Deterrence and crime opportunity theories are usually applied to understand the crime control gains generated by hot spots policing (Braga & Weisburd, 2010; Nagin, 2013). In the present review, the strong effects of community problemoriented policing to reduce disorder seem to emphasize crime opportunity theories over basic deterrence in explaining the mechanisms driving the crime reductions observed in the included hot spots policing studies.

Sound criminological theory helps guide the development and implementation of effective crime control policies. A rigorous body of evaluation evidence clearly needs to be developed to understand the theoretical mechanisms associated with successful disorder policing programs (Weisburd et al., 2015; Welsh et al., 2015). Given the mixed evidence base, future theoretical inquiries may be better served by testing broken windows constructs as conceptual elements of crime opportunity theories that could be salient to explaining criminal behavior in specific contexts. Operationalizing broken windows as part of crime opportunity theory may also help curtail harmful consequences when designing prevention programs, because a premium would be placed on changing very specific criminogenic situations and dynamics rather than on the development of overly simplistic enforcement schemes intended to deter and incapacitate disorderly people. Kelling (2015) argued that the broken windows perspective was developed as a metaphor to inspire police to prevent crime rather than simply react to crime. Metaphors published in the *Atlantic Monthly* are generally not intended to be robust crime causation

theories. Given the renewed interest in dealing with disorder to prevent more serious crime, the time is ripe to develop and test new theoretical frameworks about the relationships among disorder, fear, informal social control, and crime.

Policing remains in an existential crisis. Recent increases in crime and disorder have generated intense calls for the police to engage proactive crime prevention strategies such as disorder policing. Unfortunately, proactive policing tactics risk causing unintended harm to communities of color who often suffer the brunt of escalating crime and disorder problems. High levels of unfocused, indiscriminate, and unlawful police enforcement activity are not well-positioned to produce meaningful violence reduction gains and can undermine police legitimacy (Braga et al., 2019d; MacDonald et al., 2016). Too many inner-city Black and Brown communities face the deadly problem of being both "over-policed" (i.e., experiencing over-aggressive police behavior in frequent encounters with residents) and "under-policed" (i.e., living in neighborhoods characterized by the inability of law enforcement to protect public safety effectively; Brunson, 2020). Disorder policing represents a viable policy option for cities suffering from increased crime. And, to some observers, dealing with disorder is vital regardless of its impact on serious crime, as it addresses "important instances of accumulative harms and offenses" (Thacher, 2004, p. 101). Nevertheless, the character of disorder policing matters greatly. On this front, this review provides an important blueprint for police departments: disorder policing works best when focused on crime problems at specific places and guided by community and problem-oriented policing principles.

CONFLICT OF INTEREST

The authors confirm that they have no conflict of interest to declare.

ORCID

Cory Schnell https://orcid.org/0000-0002-4034-0953 *Brandon C. Welsh* https://orcid.org/0000-0003-4836-8405

ENDNOTES

¹Rates calculated from https://cde.ucr.cjis.gov/LATEST/webapp/#/pages/explorer/crime/crime-trend (accessed December 18, 2023).

- ²Collective efficacy represents human intervention to deal with crime, disorder, and other problems stemming from resident trust, solidarity, shared expectations, and a willingness to intervene in support of neighborhood social control (Sampson et al., 1997).
- ³Routine activities theory suggests that crime occurs when a suitable target converges in space and time with a likely offender (Cohen & Felson, 1979) and supports crime prevention activities such as introducing capable guardians who can protect victims, effective managers who diminish crime risks at specific time and places, and intimate handlers who can exert control over likely offenders (Felson & Boba Santos, 2009). Rational choice theory suggests that potential offenders make rudimentary decisions about the risks, rewards, and effort involved in completing criminal acts (Cornish & Clarke, 1986), which, in turn, forms the basis of numerous situational crime prevention techniques designed to change offender decision-making processes (Clarke, 1997).
- ⁴ In the case of *Terry v. Ohio* (1968), the Supreme Court upheld the right of police officers to conduct brief threshold inquiries of suspicious persons when they have reason to believe that such persons may be armed and dangerous to the police or others. In practice, this threshold inquiry typically involves a safety frisk of the suspicious person.
- ⁵The following search terms were used: broken windows AND police, disorder AND police, incivilities AND police, disorder policing, order maintenance policing, zero tolerance policing, quality of life policing, misdemeanor arrest policing, and signal crimes.
- ⁶Sociological Abstracts, Educational Resources Information Clearinghouse (ERIC), Criminal Justice Abstracts, National Criminal Justice Reference Service (NCJRS), ProQuest Dissertations and Theses Global, Catalog of U.S. Government Publications (CGP), ProQuest Publicly Available Context, American Psychological

Association (APA) PsychoInfo, EBSCO Social Science Full Text, EBSCO Academic Search Complete, CINCH Australian Criminology Database, HeinOnline, WordCat, Web of Science Core Collection, Global Policing Database, and Google Scholar. In addition, we examined governmental and nonprofit organization webpages (e.g., Cochrane Library), grey literature databases (e.g., Rutgers Gottfredson Library Grey Literature) and online abstracts of articles presented at professional criminology and criminal justice conferences (e.g., American Society of Criminology).

⁷These journals were: Criminology, Criminology & Public Policy, Justice Quarterly, Journal of Research in Crime and Delinquency, Journal of Experimental Criminology, Journal of Criminal Justice, Police Quarterly, Policing, Police Practice and Research, British Journal of Criminology, Journal of Quantitative Criminology, Crime & Delinquency, Journal of Criminal Law and Criminology, and Policing and Society.

⁸Wilson (2022) suggests the following formula to estimate the quasi-Poisson overdispersion parameter: $\emptyset = \frac{1}{\sum n_k - 2} \sum \frac{s_k^2 (n_k - 1)}{\overline{x_k}}$, where $\overline{x_k}$ is the mean count (or rate) for the treatment and control areas both at pre-test and post-test, resulting in four means; s_k is the standard deviation for each of the four mean counts; and n_k is the number of counts contributing to each mean and standard deviation. For studies that reported the IRR and its standard error, we used those metrics in the meta-analysis as these count regression models already adjusted for overdispersion. Although Wilson recommends adjusting for overdispersion by using a quasi-Poisson model, he observes that most studies do not report the information necessary to allow for this calculation. When such data were not available in this analysis, we followed the approach used by Braga and Weisburd (2022), which substituted the adjustment developed by Farrington et al. (2007) as a suitable solution for addressing overdispersion issues when estimating the standard error of the log RIRR.

- ⁹The Jersey City Displacement Study involved two separate tests of policing disorder interventions to control one prostitution hot spot and one drug crime hot spot (Weisburd et al., 2006). The Detroit Antigang Initiative involved distinct tests of policing disorder interventions implemented in the two separate policing districts (Bynum & Varano, 2003). The Seattle Collaborative Problem-Solving Project involved two separate tests of policing disorder interventions across distinct hot spots with varying land uses (Gill et al., 2018).
- ¹⁰ Martinez (2013) speculated that the observed increases in calls for service were the result of stronger relationships between the team policing officers and Palos Verdes residents rather than from a backfire effect of the program. Weisburd et al. (2024) call this "crime reporting sensitivity" bias and suggest it occurs because community policing and similar kinds of programs lead to more cooperation with the police and subsequently increased crime reporting.
- ¹¹Weisburd et al. (2006) used a quasi-experimental design to evaluate the effects of problem-oriented policing interventions in a drug hot spot and a prostitution hot spot that yielded significant reductions in the targeted crime problems with strong evidence of a diffusion of crime control benefits into the surrounding areas. Carson and Wellman (2018) used a quasi-experimental design to evaluate a community problem-oriented policing program in an undisclosed suburban location and found null effects for total calls for services, decreased violent crime calls, and increased drug crime calls. Blattman et al. (2017) used a randomized experimental design to evaluate the effects of increased police patrols combined with municipal service clean ups at hot spots in Bogotá, Colombia, and found crime reductions in targeted locations with some evidence of crime displacement. Mejia et al. (2022) used a quasi-experimental design to evaluate the effects of aggressive order maintenance in 80 cities in Colombia and found crime reductions in target locations with some evidence of a diffusion of crime control benefits into surrounding areas.

 $^{12}Q = 306.830, df = 53, p < 0.0001, I^2 = 82.727; \tau^2 = 0.091, SE = 0.063, \tau = 0.302.$

- ¹³Random effects models were used to estimate the overall log RIRR effect size. For the largest effect size metaanalysis, Q = 371.621, df = 53, p < 0.001, $I^2 = 85.738$; $\tau^2 = 0.136$, SE = 0.090, $\tau = 0.369$.
- ¹⁴Random effects models were used to estimate the overall log RIRR effect size. For the smallest effect size metaanalysis, Q = 333.398, df = 53, p < 0.01, $I^2 = 84.103$; $\tau^2 = 0.101$, SE = 0.070, $\tau = 0.317$.
- ¹⁵Random effects models were used to estimate the overall log RIRR effect size. For the crime displacement and diffusion meta-analysis, Q = 116.835, df = 21, p < 0.001, $I^2 = 82.026$; $\tau^2 = 0.031$, SE = 0.018, $\tau = 0.176$.
- ¹⁶We used a random effects model for this comparison. Quasi-experiment Q = 298.697, df = 42, p < 0.001, $I^2 = 85.939$. Randomized controlled trial Q = 12.655, df = 10, p < 0.001, $I^2 = 56.171$. Between group Q = 4.478, df = 1, p < 0.05.
- ¹⁷A random effects model was used because the within-group effect size variation was determined to be heterogeneous for the two program types. For community problem-oriented policing programs, Q = 270.571, df = 34,

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p < 0.001, $I^2 = 87.434$; $\tau^2 = 0.113$, SE = 0.083, $\tau = 0.336$. For aggressive order maintenance policing programs, Q = 35.822, df = 18, p < 0.01, $I^2 = 49.752$; $\tau^2 = 0.050$, SE = 0.041, $\tau = 0.224$. The between group Q = 8.417, df = 1, p < 0.05.

¹⁸ Separate random effects models were used in this exploratory analysis. It is important to note that approximately 60% of the community problem-solving studies involved interventions focused on hot spots while only about 24% of the order maintenance studies involved interventions focused on hot spots. As such, there is some potential for confounding in these analyses as some of the community problem-solving impact may be attributable to the greater geographic focus inherent in hot spots policing.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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AUTHOR BIOGRAPHIES

Anthony A. Braga, Ph.D., is the Jerry Lee Professor of Criminology and the Director of the Crime and Justice Policy Lab at the University of Pennsylvania. He is also a visiting professor (during academic year 2024-2025) and an affiliate of the Crime Lab in the Harris School of Public Policy at the University of Chicago. His research focuses on fairness and effectiveness in policing, gang violence reduction, and gun violence prevention.

Cory Schnell, Ph.D., is an assistant professor of criminology and criminal justice at the University of South Carolina. His research focuses on refining descriptions of the microspatiotemporal distribution of crime patterns and program evaluations of police practices.

Brandon C. Welsh, Ph.D., is a professor of Criminology at Northeastern University, the visiting professor of Global Health and Social Medicine at Harvard Medical School, and the Director of the Cambridge-Somerville Youth Study. He is also the Co-Director (with Eric Piza) of Northeastern University's Crime Prevention Lab. His research focuses on the prevention of delinquency, crime, and interpersonal violence and evidence-based social policy. He has written extensively on these topics and is an author or editor of 12 books, including *The Oxford Handbook of Evidence-Based Crime and Justice Policy* (Oxford University Press, 2024).