

A systematic review and meta-analysis of the relationship between policing and collective efficacy

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Abstract

Objectives: To systematically review the evidence of the relationship between policing and collective efficacy.

Methods: A systematic review and meta-analysis synthesising data from 16 studies (4 experimental/quasi-experimental, 12 observational) assessing the relationship between policing and collective efficacy.

Results: Overall, police trustworthiness was the only measure of policing that was significantly associated with collective efficacy. People who thought the police were an effective and supportive resource perceived greater collective efficacy in their neighbourhoods.

Conclusions: The contribution of policing to collective efficacy seems to be about supporting communities by providing a trustworthy presence, which may reassure people the police will be there if needed.

Key words: collective efficacy; community policing; informal social control; legitimacy; policing; trust

Introduction

Collective efficacy is a neighbourhood social process that emphasises social ties among neighbours and a willingness to intervene to solve local problems. A collectively efficacious neighbourhood is one in which residents know and trust one another and are motivated to take collective action. Decades of research has demonstrated a range of positive outcomes associated with collective efficacy, including better overall health (Browning and Cagney 2002); a lower level of bullying in schools (Williams and Guerra 2011); and decreased levels of partner violence (Wright and Benson 2011). Furthermore, neighbourhoods high in collective efficacy tend to experience fewer crime problems (Sampson *et al.* 1997, Sampson and Wikström 2008, Mazerolle *et al.* 2010, Burchfield and Silver 2013, Armstrong *et al.* 2015, Gerell and Kronkvist 2017, Weisburd, White, *et al.* 2020) and have lower levels of fear of victimisation and perceived disorder (Brunton-Smith *et al.* 2014).

Despite the crime-reducing (and other) benefits of collective efficacy, little research has examined what generate and sustains it over time (Wickes *et al.* 2013, Hipp and Wickes 2017). However, policing is thought to be one factor that shapes levels of collective efficacy within neighbourhoods (Sargeant *et al.* 2013, Sargeant 2017, Kochel and Gau 2019). Three mutually compatible mechanisms have been proposed in the literature: (1) trust in police (Kubrin and Weitzer 2003, Silver and Miller 2004, Drakulich and Crutchfield 2013); (2) police legitimacy (LaFree 1998, Kochel 2012); and (3) place-based, community policing approaches (Scott 2002, Renauer 2007, Sargeant *et al.* 2013, Kochel and Weisburd 2019). A recent Rapid Evidence Assessment (REA) on this topic found that perceptions of police linked to the ‘action’ of officers and organisations (broadly, the extent to which people trust the police), and specific community policing approaches such as visibility and community engagement, were associated with perceptions of collective efficacy within neighbourhoods

(Yesberg and Bradford 2021). Police legitimacy, on the other hand, was relatively unrelated to collective efficacy.

To date, there has been no systematic search of the literature and no quantitative synthesis of the evidence base. This paper presents findings from a systematic review and meta-analysis investigating the extent to which police activity and behaviour is related to collective efficacy in neighbourhoods. We begin with a review of the literature on collective efficacy and outline the proposed mechanisms linking policing and collective efficacy. We then describe the methodology and present the results. We conclude with a discussion of the implications of our findings for future research.

Conceptualising collective efficacy

Collective efficacy was initially introduced in psychology as a way to explain group performance (Bandura 1997). The idea is that a collective sense of being able to accomplish a shared task will influence “what people choose to do as a group, how much effort they put into it, and their staying power when group efforts fail to produce results” (Bandura 1982: 143). The concept was introduced to the neighbourhood effects literature by Sampson and colleagues, who defined collective efficacy as “the process of activating or converting social ties among neighbourhood residents in order to achieve collective goals” (Sampson 2010: 802). Collective efficacy is similarly conceptualised as a task specific property of groups, where neighbourhoods are the group of interest and the task is one of reducing crime and disorder through the provision of informal social control (Hipp and Wickes 2017).

In turn, informal social control relates to residents’ willingness to enforce social norms and act to address neighbourhood problems. It refers to how members of a community regulate the behaviour of others through non-formal means, through the maintenance of norms and values, and display of shared expectations of behaviour. The construct has been

measured in different ways in the literature. One approach used by researchers has been to measure the *potential* for informal social control by asking residents how likely they would be to engage in certain behaviours if the situations arose (e.g. ‘how likely is it that you would intervene if...’; Warner, 2007). Other studies have measured informal social control *behaviour* by asking residents how often they have engaged in specific activities to address problems in their neighbourhood (Wells *et al.* 2006). In both instances, responses from residents are combined at the neighbourhood level to create a measure of the likelihood that residents in a given neighbourhood will engage in informal social control behaviour.

However, the most common way informal social control has been measured is by asking residents to report on what they think their neighbours might do in different scenarios (e.g. ‘how likely is it that your neighbours would intervene if...’; Sampson *et al.*, 1997; Wickes *et al.*, 2013). Responses reflect the extent to which residents expect other people in their neighbourhood will engage in informal social control behaviour. When aggregated at the neighbourhood level, this measure can be conceptualised as the “shared expectations” of informal social control (Sampson and Raudenbush 1999, Morenoff *et al.* 2001).

Along with differences in measurement, there are also variations in how collective efficacy has been conceptualised. For some researchers, informal social control is synonymous with collective efficacy (Hipp 2016). Yet, others suggest that informal social control is only one part of the construct of collective efficacy; the other component is thought to be social cohesion (i.e., ties between neighbours and mutual trust). Sampson and colleagues (1997: 918) define collective efficacy as “social cohesion among neighbours combined with their willingness to intervene on behalf of the common good”. There is debate in the literature about whether social cohesion and informal social control should be combined into a single construct or treated separately. Some evidence has shown that the two constructs are not always highly correlated (Horne, 2004), do not consistently load onto a

single factor (Wickes *et al.* 2013, Gau 2014, Armstrong *et al.* 2015), and that the causal relationship between them, and with downstream variables such as crime rates, might vary from context to context (Rhineberger-Dunn and Carlson 2011). In this review, we include studies that measure collective efficacy as either (a) informal social control or (b) a combination of informal social control and social cohesion. We exclude studies that only measure social cohesion because, according to all conceptualisations of collective efficacy, informal social control is integral to the concept.

Policing and collective efficacy

Collective efficacy research has predominantly explored its consequences (i.e., a reduction in crime). Yet, given the myriad positive outcomes of collective efficacy, there is obvious value in understanding what generates and sustains collective efficacy over time. Policing is thought to be one such factor, and three potential mechanisms have been proposed in the literature: (a) trust and confidence in police; (b) police legitimacy; and (c) policing strategies, such as community policing. These are not mutually incompatible but do differ in more or less nuanced ways.

First, some scholars have suggested that trust and/or confidence in police fosters collective efficacy. The idea is that when residents view the police as a capable and effective resource, believe they exercise their authority in a fair and just manner, and are consequently willing to call upon or otherwise invoke the police, they may be more inclined to take collective action to address neighbourhood problems. Conversely, when residents do not feel the police are a viable resource, that is able and willing to support them, they may feel too vulnerable to intervene in neighbourhood issues, because they may see their own actions as both less effective and more risky (Kubrin and Weitzer 2003, Drakulich and Crutchfield 2013). In other words, collective efficacy is influenced by perceptions of formal social

control efforts (i.e., the ability and readiness of the police to step in if necessary). In an ethnographic study of a predominantly white working-class neighbourhood in the United States, Carr (2003) showed that residents depend on and act through agents of formal social control in their informal attempts to address crime. For residents to feel confident personally intervening in neighbourhood problems, they need to trust that police are a reliable resource who will arrive quickly and effectively address the problem (Kochel and Weisburd 2019).ⁱ

Second, researchers suggest that the police may facilitate collective efficacy through their legitimacy (LaFree 1998). Legitimacy refers to the extent to which people believe the police behave in an appropriate manner and feel a normatively grounded obligation to obey them (Jackson *et al.* 2013). Acting as moral guardians, the police construct and enforce shared norms and values and provide guidance on acceptable behaviour (LaFree 1998, Triplett *et al.* 2003, Kochel 2012). However, when residents do not see the police as legitimate, this undermines the validity and effectiveness of shared norms and values, meaning residents are less willing to cooperate with police, less willing to grant police discretion, and even less likely to obey the law (Sunshine and Tyler 2003, Tyler and Fagan 2008, Jackson *et al.* 2013, Van Damme *et al.* 2013). Similarly, when police lack legitimacy, neighbourhood social processes may break down, making it difficult for residents to develop a trusting relationship with each other and have confidence that their neighbours would act in the best interest of the neighbourhood (Kochel 2012). Police legitimacy is closely linked to trust, and at the threshold it seems likely the two would interact to promote collective efficacy.

The third proposed mechanism is that certain policing strategies will increase collective efficacy within communities. Community or neighbourhood policing is a law enforcement approach that emphasises community involvement in crime prevention and seeks to increase contact between police and local residents (Gill *et al.* 2014). Community

policing scholars argue that, if crime is a result of social disorganisation, policing strategies should seek to build and sustain vital social processes within neighbourhoods (Rosenbaum 1987, Skogan 1990). Community policing is expected to increase collective efficacy by providing more opportunities for residents to interact with one another, by increasing access to police resources, and by stimulating ‘self-help’ within communities (Scott 2002, Renauer 2007, Sargeant *et al.* 2013). Closely linked to community policing, police presence or visibility is also thought to contribute to collective efficacy through reassuring residents of safety and reducing fear of crime, allowing them to confidently engage in their own informal social control behaviours (Kochel and Weisburd 2019).

Measuring trust and legitimacy

While central to much current criminological debate, public trust in, and the legitimacy of, police have been conceptualised and measured in a wide variety of ways. Considering the former, a widely accepted definition of trust is the willingness to be vulnerable to another under conditions of risk (Hamm *et al.* 2017). On this account, people are willing to be vulnerable to police when they have formed positive evaluations and expectations of their competency and good intentions – that is, when they perceive police to be *trustworthy*. This definition is helpful for understanding why trust in police might lead to or enhance collective efficacy. People who engage in informal social control on the basis that police will intervene if necessary are clearly willing to take the risk that police will not, in fact, do so. Yet, most studies do not measure trust as willingness to be vulnerable, but rather as perceptions of trustworthiness (the extent to which people feel police are effective, fair, etc.; see for example Van Damme 2017), or via cognitive assessments (e.g. Wu and Sun 2009; the simplest such measure would be ‘do you trust the police’).

Legitimacy has been conceptualised and measured in an even wider variety of ways: as a perceived ‘duty to obey’ police (Tyler 2006), often combined with institutional trust and/or confidence; as a more tightly defined *moral* duty to obey and ‘normative alignment’, a sense that police share and enact appropriate values (Jackson *et al.* 2023); and as a distinct set of judgements of police performance and behaviour very similar to perceptions of trustworthiness (Tankebe 2013). This conceptual and methodological confusion poses challenges in the current context, particularly to the extent that measures of trust and legitimacy overlap. We describe below how we distinguish between the two and return to this question in the discussion.

Systematic review

To date, there has been no systematic review of the literature on policing and collective efficacy and no quantitative synthesis of the evidence base. A recent rapid evidence assessment (REA) (Yesberg and Bradford 2021) provided a narrative review of the literature on policing and collective efficacy. Overall, of the 39 studies identified in the REA, trust in police was the aspect of policing most consistently associated with collective efficacy. There was also some evidence that community policing activities, such as visibility and community engagement, predicted collective efficacy. By contrast, police legitimacy was largely unrelated to collective efficacy. Over half (54 percent) of the 39 studies reviewed tested the impact of collective efficacy on measures of policing, such as trust and legitimacy, rather than the other way around, arguing that neighbourhood context and concerns about social order play an important role in shaping attitudes toward the police (for example, Jackson and Sunshine 2007, Jackson *et al.* 2013, Nix *et al.* 2015). In this review we focus specifically on studies that have explored the impact of policing on collective efficacy (i.e., that include collective efficacy as the dependent variable).

Our specific review questions are:

1. What is the association between police activity/behaviour and collective efficacy?
2. What types of police activity/behaviour are most/least effective at increasing collective efficacy?

Method

Search strategy

The strategy comprised several stages: (1) a keyword search of electronic databases (ProQuest, Scopus, Web of Science); (2) a keyword search of the publications of relevant research, government, and professional agencies;ⁱⁱ and (3) backward and forward citation searches to identify additional publications not identified through keyword searches.

Keyword searches were first conducted on 13 April 2021 and updated on 1 February 2023.ⁱⁱⁱ Search terms were modelled around the two key areas of interest: policing and collective efficacy. The search terms were:

- ‘police’ OR ‘policing’ OR ‘law enforcement’ AND ‘collective efficacy’ OR ‘informal social control’ OR ‘social cohesion’

Inclusion criteria

Because the literature on policing and collective efficacy is less advanced than the literature on other outcomes (e.g. cooperation, compliance, crime), the review included studies that 1) tested the impact of a particular policing intervention on collective efficacy (i.e. randomised field experiments or quasi-experiments); or 2) tested the association between perceptions of police activity/behaviour and collective efficacy (i.e. observational studies). The following inclusion criteria were used:

1. The study must be quantitative and use experimental, quasi-experimental or observational methods.
2. The study must have been published since 1997 and be available in English (but from any country setting).^{iv}
3. Collective efficacy must be included as a dependent variable in analyses.
4. Respondents/research participants must be residents of a particular neighbourhood and identifiable as such.
5. The study must measure collective efficacy as either (1) informal social control or (2) a combination of informal social control and social cohesion ('collective efficacy').^v

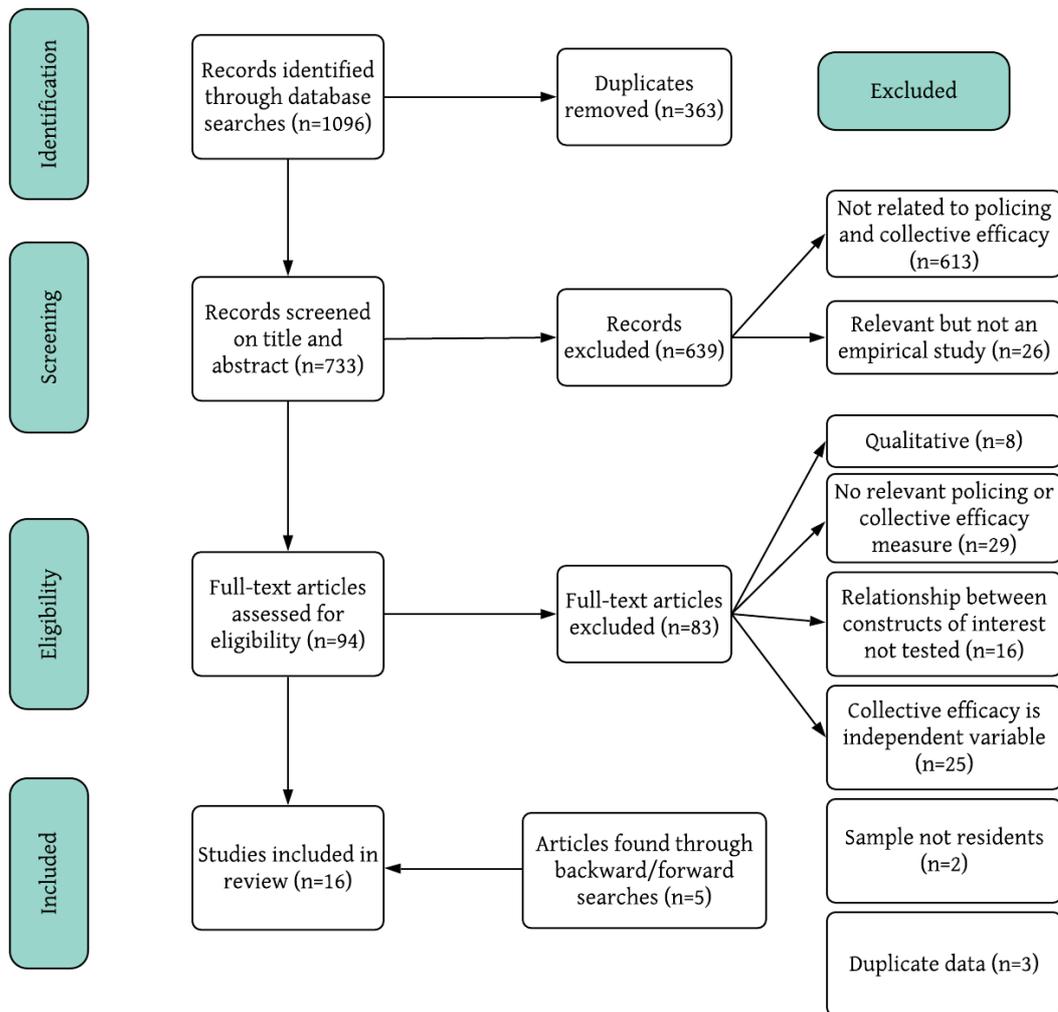
Data extraction

EPPI-Reviewer Web software and Mendeley were used as reference and information management tools. Identified studies were initially screened through reading the title and abstract to remove those that were unsuitable based on the above inclusion criteria. Two reviewers (Yesberg and Costi) independently selected articles against the inclusion criteria. Discrepancies in reviewer selections were resolved at a meeting between reviewers prior to selected articles being retrieved.

Full copies of the articles identified by the search and considered to meet the inclusion criteria based on their title and abstract were obtained for data synthesis. Full-text screening was then conducted on all identified studies, and the inclusion criteria was again applied to exclude ineligible studies. Discrepancies in reviewer selections at this stage was resolved through discussion between the two reviewers, and with the assistance of a third reviewer (Bradford) when required. For those studies brought forward to the final phase of the systematic review, backward and forward citation searches were performed to identify further eligible studies. Backward searches involved reviewing the titles of each study cited

within the included study; forward searches involved reviewing the citations that each included study accrued on Google Scholar up to and including the end of January 2023. Full-text screening was applied to those studies considered eligible based on their title and abstract.

Figure 1. Systematic review screening process



Critical appraisal

Identified studies that met the inclusion criteria after full-text screening were grouped into one of the following categories: randomised field experiments or quasi-experiments, longitudinal observational studies, and cross-sectional observational studies. These studies

were then assessed for methodological validity prior to inclusion in the review. The quality of studies was assessed in terms of their respective research design, sample bias, equivalency between groups, and research standards adhered to.

In total, we found 16 studies meeting the inclusion criteria (see Table 1). The full screening process is shown in Figure 1. The following information, where available, was collected from studies that met the inclusion criteria: publication details; interventions details (if an experiment); descriptions of the outcomes of interest; research design; sample size and characteristics; main findings; and effect sizes (see Table 3 and the appendix).

Statistical procedures

We used meta-analysis to combine quantitative findings from studies that reported sufficient data to calculate an effect size. Where studies did not include sufficient data, the authors of these studies were contacted to obtain the relevant data. We conducted a separate meta-analysis for the experiments/quasi-experiments, as well as separate meta-analyses for each independent variable: trustworthiness, legitimacy, and community policing. We used several different methods for calculating effect sizes, depending on the type of study (experimental or observational) and presentation of results in the original study. For the experiments/quasi-experiments, we computed a standardised mean difference (d) effect size. For the observational studies, we used zero-order correlations (r).

The analysis was conducted in R with the package “meta”. Random-effects models were used in pooling the effect sizes as some degree of between-study heterogeneity was anticipated. For each experiment/ quasi-experiment, the standardized mean difference (d) between the treatment and control group at post-test was calculated. Therefore, the effect size measure used in the meta-analysis of experimental studies is Cohen’s d . On the other hand, for observational studies, zero-order correlations (r) between variables were extracted and

pooled. The effect size measure here is thus Pearson's r . For each meta-analysis, heterogeneity (i.e. the extent to which there is variation in the effect sizes across included studies) was assessed with the Q and I^2 (Higgins and Thompson 2002) and influence diagnostics based on leave-one-out analysis were conducted to detect outliers and influential cases (Viechtbauer and Cheung 2010). It is noted that some of our meta-analyses include a small number of studies and that in these situations I^2 can be positively biased (von Hippel 2015). Confidence intervals are hence included for us to interpret I^2 cautiously.

Results

Study characteristics

Table 1 summarises the characteristics of the 16 included studies. The majority were conducted in the United States ($n=10$), with others coming from the United Kingdom ($n=2$), Trinidad and Tobago ($n=2$), China ($n=1$) and Australia ($n=1$). Three studies were randomised field experiments which tested the effect of a policing intervention on collective efficacy, and one study was a quasi-experiment (i.e. residents in intervention sites were compared to residents in matched control sites). Three studies used longitudinal observational designs, and the remaining nine studies used cross-sectional observational designs. As per the inclusion criteria, collective efficacy was included as the dependent variable in the analysis.

Table 1. Characteristics of eligible studies

Characteristic	Category	n
Publication type	Journal article	13
	Dissertation or thesis	1
	Government/technical report	1
	Pre-print	1
Research design	Randomised experiment	3
	Quasi-experiment	1

	Longitudinal observational study	3
	Cross-sectional observational study	9
Country	United States	10
	United Kingdom	2
	Trinidad and Tobago	2
	Australia	1
	China	1
Dependent variable	Informal social control	9
	Collective efficacy	9
Independent variable	Policing intervention	4
	Trustworthiness	11
	Legitimacy	3
	Community policing	3

Measurement of key constructs

Collective efficacy

Informal social control – defined as residents’ perceptions of the likelihood their neighbours would intervene to solve local problems – was the dependent variable in seven studies, and in seven studies the dependent variable was collective efficacy: a combined measure of informal social control and social cohesion. In two studies, both informal social control and collective efficacy were included as (separate) dependent variables. Social cohesion was also included as a separate dependent variable in a number of the studies, but this outcome (on its own) does not form part of the current review.

Policing

Four studies included in the review were randomised experiments or quasi-experiments which tested the effect of a policing intervention on residents’ perceptions of collective

efficacy. Two of the interventions were of some form of community policing initiative (Tuffin *et al.* 2006, Kochel and Weisburd 2019); one was an intervention specifically designed to increase collective action and collective efficacy (Weisburd, Gill, *et al.* 2020); and one was a broken windows style intervention (Weisburd *et al.* 2011).

The remaining 12 studies were observational. There was considerable variation in these studies in the way the policing constructs were conceptualised and measured, as well as variation in what the policing constructs were called (e.g., trust, satisfaction, police efficacy, police competence, police service quality). To make sense of the different measures, we assessed the individual items and grouped them according to their content (see Table 2 for a summary of the policing measures and the appendix for the individual items). The measures fell into three broad categories: (1) trustworthiness of police; (2) police legitimacy; and (3) community policing. We defined trustworthiness as any expectations or evaluations of the police, including whether people see the police as a capable and effective resource (i.e. effectiveness), and believe they exercise their authority in a fair and just manner (i.e. procedural/distributive justice; see below and the appendix). Ten observational studies included a measure of trustworthiness.

Legitimacy was defined as whether residents believe the police behave in an appropriate manner and whether they feel an obligation to obey the police. Four studies included a measure of legitimacy. Lastly, three papers included aspects of community policing. One study included a measure of the presence of a community policing initiative^{vi}, and two studies included variables related to police presence and community engagement.

Table 2. Policing measures included in observational studies

Policing measure	Sub-measure	Example item
Trustworthiness	Procedural justice	- The police in my neighbourhood address citizens in a respectful manner and appropriate tone
	Distributive justice	- The police in this area treat everyone fairly regardless of who they are
	Effectiveness	- Police do a good job addressing neighbourhood problems
Legitimacy	Obligation to obey	- I feel that I should accept the decisions made by legal authorities
	Normative alignment	- The police generally have the same sense of right and wrong that you do
Community policing	Visibility	- How often do you see the police?
	Engagement	- During the past six months, have the police met and worked with local business or residents to address crime and other problems?

Narrative summary of study findings

We first present a narrative summary of the findings from the 16 studies included in the review, before discussing the meta-analysis results (which includes a subset of studies for which an effect size could be calculated). Table 3 includes the characteristics of each study and a summary of the main findings. The summary below is organised based on the policing measure included in the study. The four field experiments are discussed first, followed by the observational studies.

Policing intervention

One randomised experiment and one quasi-experiment tested the impact of a community policing intervention on collective efficacy. First, Kochel and Weisburd (2019) tested the

impact of two types of community policing approaches – collaborative problem-solving and police presence (directed patrol) – on collective efficacy in crime hot spots. The authors found that, over time, an increase in police presence promoted modest improvements in collective efficacy. They found the impact of increased police presence first benefited informal control in the short term, then social cohesion in the long term. There was no overall effect of the problem-solving intervention on collective efficacy, although there were some long-term improvements in informal social control in problem-solving hotspots. The authors suggested the limited community involvement in the problem-solving projects may explain the modest impact. Second, Tuffin et al. (2006) tested the effect of the National Reassurance Policing Programme (NRPP) – a neighbourhood policing initiative delivered in eight police forces in England – and found no significant effect of the programme on collective efficacy (there was a significant effect of the programme on one indicator of social cohesion – whether people trust police in their area).

Two other experiments were included in the systematic review. The first tested an intervention specifically designed to increase collective action and collective efficacy at hot spots (Assets Coming Together; Weisburd et al. 2020) via three primary mechanisms: establishing proximal relationships with and between residents; increasing trust between police and residents; and developing shared expectations that empower residents to take action. The authors found the intervention had little impact on collective efficacy, although it did increase citizen reports of participation in collective actions (e.g. collaboration in problem solving). The last experiment tested a broken windows style intervention, also in crime hot spots, and the authors found no significant impact of the intervention on levels of collective efficacy (Weisburd *et al.* 2011).

Table 3. Study characteristics and thematic findings

Citation	Location	Design	Respondent <i>N</i>	Area <i>N</i>	Age	%F	%black/ African	DV	IV	Thematic findings
Drakulich and Crutchfield (2013)	USA	C	5812	123	49	0.5	0.05	ISC	T (x2)	Both measures of trustworthiness (procedural injustice, police efficacy) predicted informal social control
Jiang et al. (2010)	China	C	1196	30	41	0.47	-	ISC	T	Trustworthiness (satisfaction with police) predicted informal social control
Kochel (2009); Kochel (2012)	Trinidad and Tobago	C	2967	74	46	0.6	0.38	ISC CE	T (x2) Leg	Both measures of trustworthiness (police misconduct, police service quality) predicted collective efficacy. Legitimacy did not predict collective efficacy
Kochel (2018)	Trinidad and Tobago	L	w1=2844 w2=2781 w3=2909	w1=84 w2=85 w3=75	w1=40 w2=39 w3=39	w1=0.50 w2=0.50 w3=0.50	w1=0.41 w2=0.42 w3=0.41	CE	T Leg	Trustworthiness (police competence) predicted collective efficacy. Legitimacy did not predict collective efficacy
Kochel and Gau (2021)	USA	L	w1=985 w2=768 w3=1098	71	w1=38 w2=42 w3=41	w1=0.60 w2=0.60 w3=0.62	w1=0.75 w2=0.71 w3=0.70	ISC	T CP (x3)	Two measures of community policing (police engagement, satisfaction with police visibility) and trustworthiness (satisfaction with police tactics) indirectly predicted informal social control, through social cohesion
Kochel et al. (2015); Kochel	USA	E	w1=985 w2=768	71	w1=38 w2=42	w1=0.60 w2=0.60	w1=0.75 w2=0.71	ISC	I	The directed patrol (police presence) intervention led to significant

and Weisburd (2019) ^a			w3=1098		w3=41	w3=0.62	w3=0.70	CE		improvements in collective efficacy
Lammers (2019)	USA	C	205	-	-	0.64	0.09	CE	Leg	Legitimacy predicted collective efficacy
Lombardo and Donner (2018)	USA	C	8782	343	43	0.59	0.4	ISC	I	The presence of a community policing intervention indirectly predicted informal social control through satisfaction with police
Pabayo et al. (2020)	USA	C	1710	16	-	0.58	0.2	ISC CE	T	Trustworthiness predicted informal social control
Sargeant (2017)	Australia	C	4403	148	51	0.59	-	CE	T (x2) Leg	Both measures of trustworthiness (police effectiveness and procedural justice) predicted collective efficacy. Legitimacy did not predict collective efficacy
Silver and Miller (2004)	USA	C	7061	342	43	0.59	0.42	ISC	T	Trustworthiness (satisfaction with police) predicted informal social control
Tuffin et al. (2006)	UK	QE	2288	-	-	-	-	CE	I	No effect of community-oriented policing intervention on collective efficacy
Warner and Burchfield (2011)	USA	C	2309	66	46	0.77	-	ISC	T	Trustworthiness predicted informal social control
Weisburd et al. (2018); Weisburd et al. (2020)	USA	E	w1=313 w2=298	-	-	w1=0.58 w2=0.59	w1=0.38 w2=0.41	ISC	I	No effect of intervention on collective efficacy

Weisburd et al. (2010); Weisburd et al. (2011)	USA	E	371	-	t=43 c=46	t=0.55 c=0.58	t=0.04 c=0.06	CE	I	There was no significant impact of heightened policing at crime hot spots on levels of collective efficacy
Yesberg et al. (2021)	UK	L	w1=14419 w2=12840 w3=12821	629	-	w1=0.54 w2=0.54 w3=0.54	w1=0.08 w2=0.08 w3=0.07	CE	T (x2) CP (x2)	One measure of trustworthiness (police fairness) predicted collective efficacy. One measure of community policing (police visibility) indirectly predicted collective efficacy

C=cross-sectional; L=longitudinal; E=experiment; QE=quasi-experiment; ISC=informal social control; CE=collective efficacy; T=trustworthiness; Leg=legitimacy; CP=community policing; I=intervention

^a This study used the same dataset as Kochel and Gau (2021), but different policing measures.

Trustworthiness

As Table 3 shows, all 10 studies that included a measure of trustworthiness found at least some positive associations between trust and collective efficacy. For example, using three waves of resident surveys from Trinidad and Tobago, Kochel (2018) found a direct positive relationship between trust (a combined measure including aspects of procedural justice and effectiveness) and collective efficacy. Also using a three-wave longitudinal survey, Yesberg et al. (2021) found a direct association between trust (procedural fairness) and collective efficacy; however, there was no effect of a second measure of trust (police effectiveness) on collective efficacy. The third longitudinal study, this time using a three-wave panel survey from the US, found no significant direct effect of trust (police satisfaction) on informal social control; however, there was a significant indirect effect on informal social control through social cohesion (Kochel and Gau 2021).

The seven cross-sectional studies that included a measure of trustworthiness also found positive associations, with higher levels of perceived trustworthiness predicting higher levels of informal social control and collective efficacy (Silver and Miller 2004, Jiang *et al.* 2010, Warner and Burchfield 2011, Kochel 2012, Drakulich and Crutchfield 2013, Sargeant 2017, Pabayo *et al.* 2020). The measures of trust included in these studies centred around both procedural/distributive justice *and* effectiveness, suggesting that perceptions of collective efficacy are related not only to whether residents believe police exercise their authority in a fair and just manner, but also whether they feel the police are a capable and effective resource.

Legitimacy

Of the four observational studies that included a measure of legitimacy, only one found a significant association with collective efficacy. Lammers (2019) found a combined measure

of obligation to obey and normative alignment significantly predicted collective efficacy. The remaining three studies (Kochel 2012, 2018, Sargeant 2017) found no significant relationship between perceptions of police legitimacy (obligation to obey and /or moral alignment) and collective efficacy. The authors suggested these results could indicate that perceptions of the policing institution as a whole (legitimacy) may have less relevance to neighbourhood social processes than perceptions of the actions of individual officers.

Community policing

Two longitudinal studies included perceptions of community policing. Both studies included a measure of visibility (police presence) and a measure of community engagement. Kochel and Gau (2021) used a panel survey and found that both satisfaction with police visibility and police-community engagement (at wave 1) were significant predictors of social cohesion (at wave 2) and, through social cohesion, these community policing measures indirectly predicted informal social control (at wave 3). Yesberg et al. (2021) used a longitudinal survey and found that police visibility had a small indirect effect on collective efficacy, through trust in police fairness. There was no direct or indirect effect of police-community engagement on collective efficacy.

Lastly, Lombardo and Donner (2018) tested whether the presence of a community policing initiative (the Chicago Alternative Policing Strategy (CAPS)) was related to a measure of informal social control. The authors found the presence of community policing led to increased levels of informal social control, but this effect was mediated by satisfaction with police, suggesting an indirect effect of the CAPS programme on informal social control.

Meta-analysis

The above narrative summary of findings indicates that trust in police and aspects of community policing seem to be most strongly associated with collective efficacy. Data was

available to calculate effect sizes in 13 of the 16 studies. We were able to obtain effect sizes for 4 experimental/quasi-experimental studies (with 9 separate effect sizes)^{vii}, along with 8 observational studies measuring trustworthiness, 3 measuring legitimacy, and 3 measuring an aspect of community policing. For the experiments/quasi-experiments we calculated standardised mean difference (*d*) effect sizes^{viii} and for the observational studies we used zero-order correlations (*r*) between the variables of interest.^{ix} The results are presented as a series of forest plots in which a positive effect, on the right-hand side of the plot, represent results in favour of an association between the policing measure and collective efficacy. In each figure, we present the effect size (*d* or *r*) and its 95% confidence for each study and the mean effect size and 95% confidence interval across all studies at the bottom of the plot (in bold). The lines either side of each point provide a visual representation of the 95% confidence interval (for the overall estimate, the width of the diamond represents the confidence interval). Table 4 provides a summary of the results.

Table 4. Summary of the pooled effect sizes and heterogeneity for the four policing measures

Policing measure	k	N	Effect [95% CI]	Heterogeneity			
				Q	df	p	I ²
Experiments/quasi-experiments	9	4055	-.05 [-.18, .07]	14.72	8	.06	45.60
Trustworthiness	8	24440	.34 [.25, .42]	103.13	7	<.001	93.5
Legitimacy	3	7575	.16 [-.02, .33]	41.67	2	<.001	95.2
Community policing	3	9481	.07 [-.07, .21]	4.61	2	.10	56.7

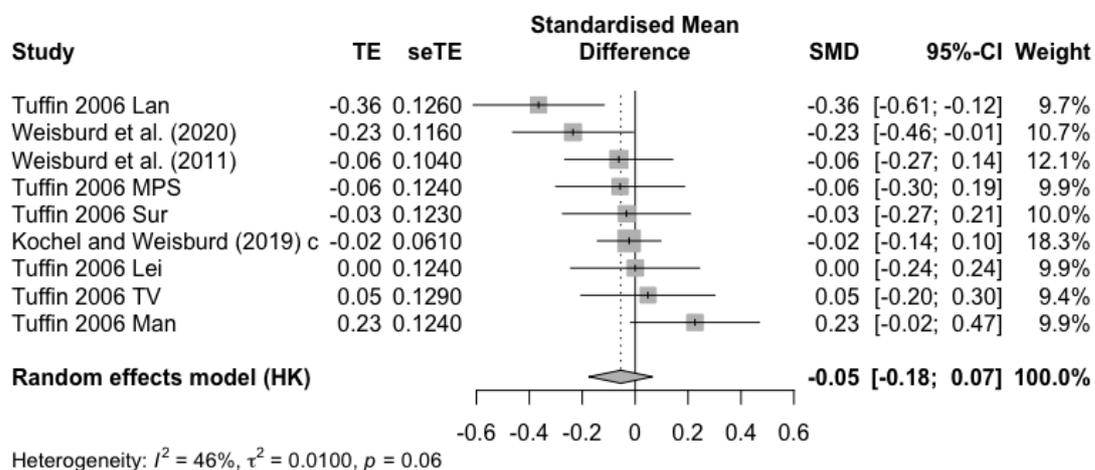
k = number of samples to calculate pooled effects; N = number of participants or neighbourhoods included in the estimate; Effect [95% CI] = pooled mean effect size (*d* or *r*) with the 95% confidence interval in brackets; Q = Cochran Q statistic for assessing heterogeneity; df = degrees of freedom for the Q statistic; p = significant level of the Q statistic; I² = I-squared heterogeneity statistic

Policing intervention

Figure 2 shows the mean estimated effect of the policing interventions (experiments/quasi-experiments) on collective efficacy. One study (Kochel and Weisburd, 2019) reported effect sizes for two community policing interventions (collaborative problem-solving and police presence) using the same control group. We could not include both effects in the same analysis as this would violate the assumption of statistical independence. We did not have a reason to choose one intervention over the other, so we used the mean effect size of the two interventions in the meta-analysis.

Overall, the policing interventions were not associated with an increase in collective efficacy. The mean Cohen's *d* score for the 9 evaluations was -0.05 and was not statistically significant ($p = 0.332$). Further, the 95% confidence interval included 0 (lower limit=-0.18, upper limit=0.07). The 9 evaluations were not significantly heterogenous (at the $p < .05$ level) according to the Q statistic ($Q(8) = 14.72, p = 0.06$), which suggests there was little variation in the effect sizes across studies. The I^2 statistic indicated that 46% of the variation in the effect size could be attributed to study-level factors ($I^2=45.60\%$, 95% CI: 0.0% - 74.8%).

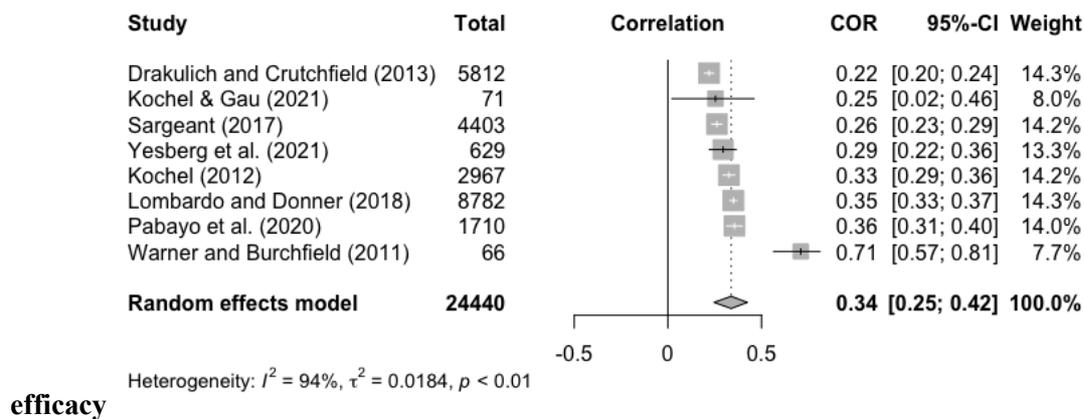
Figure 2. Forest plot of effect sizes of policing interventions on collective efficacy



Trustworthiness

Figure 3 shows the mean effect size for the association between trustworthiness and collective efficacy. Overall, there was a significant correlation, with a mean correlation of 0.338, $p < .001$. There is strong evidence of heterogeneity ($Q(7) = 103.13$, $p < .001$), which indicates there is significant variation in the effect sizes across studies. The I^2 statistic indicated that 94% of the variation in the effect size could be attributed to study-level factors ($I^2=93.5\%$, 95%CI: 89.5%- 96.0%). Based on the influence diagnostics, Warner and Burchfield (2011) is regarded as an influential case in the meta-analysis. After the removal of this case, the mean effect size was 0.300 ($p < .001$), which is slightly lower than the result without the elimination of the influential case yet remains statistically significant.

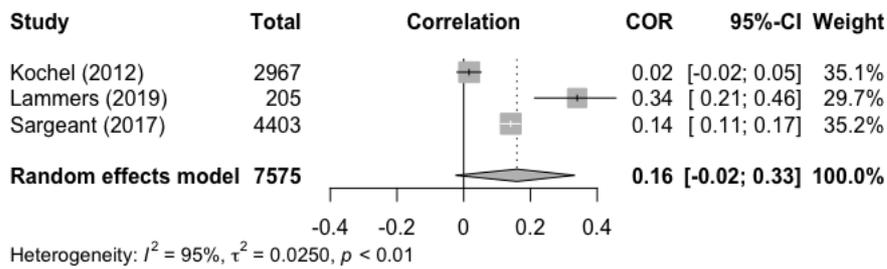
Figure 3. Forest plot of effect sizes for trustworthiness and collective



Legitimacy

Figure 4 shows the mean effect size for the association between legitimacy and collective efficacy. Overall, there was no significant correlation between legitimacy and collective efficacy at the $p < .05$ level, with a mean correlation of 0.159, $p = .088$. Heterogeneity is high ($Q(2) = 41.67$, $p < .001$) and the I^2 value is 95.2% (95%CI: 89.3%- 97.9%)

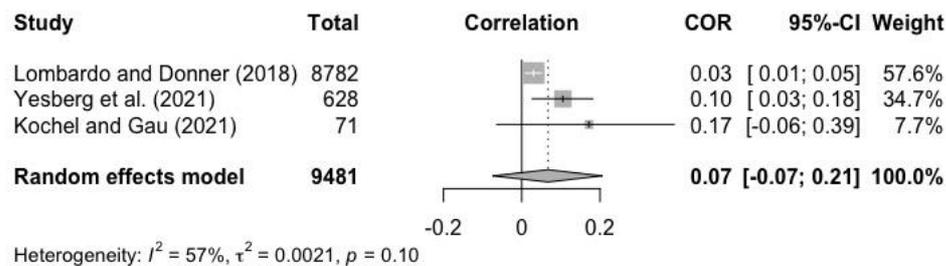
Figure 4. Forest plot of effect sizes for legitimacy and collective efficacy



Community policing

Figure 5 shows the mean effect size for the association between community policing and collective efficacy. Overall, there was no significant correlation between community policing and collective efficacy at the $p < .05$ level, with a mean correlation of 0.067, $p = .062$. While Cochran's Q test showed a non-significant result ($Q(2) = 4.61$, $p = .100$), the I^2 statistic suggests that there is a moderate heterogeneity ($I^2 = 56.7\%$, 95%CI : 0.0%- 87.6%).

Figure 5. Forest plot of effect sizes for community policing and collective efficacy



Discussion

In this paper we systematically reviewed the evidence on the relationship between policing and collective efficacy. Overall, there was a lack of studies testing whether specific police strategies or interventions foster collective efficacy within communities. Unlike the large quantity of research conducted on other outcomes, such as crime, perceived disorder, fear of crime, citizen satisfaction and police legitimacy (Braga et al., 2019; Gill et al., 2014; Hinkle

et al., 2020; Mazerolle et al., 2013), only four experiments or quasi-experiments were found that tested the effect of a policing intervention on collective efficacy. Overall, these interventions had no effect on collective efficacy. Combining these studies in one meta-analysis is potentially problematic because the interventions themselves comprised different policing approaches; two of the interventions were of some form of community policing initiative (Tuffin *et al.* 2006, Kochel and Weisburd 2019), one was an intervention specifically designed to increase collective action and collective efficacy (Weisburd, Gill, *et al.* 2020), and one was a broken windows style intervention (Weisburd *et al.* 2011). Yet, individually, none of the interventions had a positive effect on collective efficacy. Kochel and Weisburd (2019) found that one aspect of community policing – police presence – significantly predicted collective efficacy, but another aspect – collaborative problem-solving – did not. More experimental research is clearly needed to understand the impact of different policing approaches on collective efficacy.

The remainder of the 16 studies included in the review were observational and tested the associations between a measure of policing and collective efficacy. These studies, although useful in understanding the relationship between policing and collective efficacy, cannot answer the question of whether specific policing approaches *cause* an increase in collective efficacy. The meta-analysis found a significant association between police trustworthiness and collective efficacy, suggesting that when people feel the police are an effective and supportive resource, they perceive a greater willingness among their neighbours to take collective action. Because trust in police procedural justice, distributive justice and effectiveness were combined under the umbrella of ‘trustworthiness’ it is not possible to make conclusions about the relative importance of each. However, some research suggests it is community understandings of police fairness/procedural justice, not effectiveness, that is most important in generating collective efficacy (Yesberg *et al.* 2021). This resonates with

the wider literature on procedural justice, which suggests that people are more ready to cooperate with the police when they feel that officers behave in a procedurally just way (Bolger and Walters 2019). It could be that believing the police operate in a fair and just manner provides reassurance to residents that, should they intervene in a particular situation, the police will support them in an appropriate manner. It could also be that perceptions and experiences of procedural justice are linked to feelings of security and belonging within wider society (Bradford 2014, Murphy *et al.* 2015); fair policing may therefore strengthen social bonds within neighbourhoods by fostering a sense of collective inclusion within wider social structures. Further research is needed to test these claims.

While the association between trustworthiness and collective efficacy is clear, the association between police legitimacy and collective efficacy is much more uncertain. There was no significant association between police legitimacy and collective efficacy at $p < .05$. Although police legitimacy has been shown to have positive effects on a range of individual outcomes, such as people's willingness to cooperate and comply with police (Sunshine and Tyler 2003, Tyler and Fagan 2008, Tyler 2011), because collective efficacy is, in criminological research at least, a construct of neighbourhoods, how people see individual, local, officers may be more important than how they see the police institution (Sargeant 2017). As above, it may be the case that trust in police is more strongly linked to 'action' – whether an individual believes officers would turn up and try to help if they called them and, crucially, their willingness to act on this belief. This comes very close to the widely accepted definition of trust: a willingness to be vulnerable to another premised on beliefs about their competency and good intentions (i.e., action based on expectations that the trustee will behave in a dependable, predictable manner; Jackson and Gau 2016, Hamm *et al.* 2017). A sense of duty toward police generated by legitimacy may be less enabling of engagement in informal social control than expectations about police action.

These conclusions rest on two important assumptions. The first is that we have correctly identified ‘trustworthiness’ and ‘legitimacy’ in the available studies. While we would argue that we have, as noted above, some conceptualisations of the latter encompass the former. The second assumption is that trustworthiness flows into trust. This would seem almost definitionally true, but recent research in policing has suggested that this is not a simple hydraulic relationship (i.e. certain factors can inhibit trustworthiness from generating trust; Bradford *et al.* 2022). All this points to the need for more careful conceptualisation and measurement of trust and legitimacy. For example, conceptualisations of legitimacy that blur into trust or trustworthiness may be rather unhelpful, since they risk confusing the motivating power of trust with that of duty, and thus mischaracterising what it is about the relationship between police and public that encourages civic-minded or pro-social behaviour.

The weak association between the community policing measures (visibility and community engagement) and collective efficacy could be due to the parameters of the meta-analysis, which used an average correlation of the community policing measures and looked at ‘direct’ effects (bivariate correlations). The narrative findings suggested there may be differential effects of the community policing variables on collective efficacy as well as an indirect relationship rather than a direct one. For example, Yesberg *et al.* (2021) found an indirect effect of police visibility on collective efficacy through trust in police fairness, and no effect of community engagement. Kochel and Gau (2021) found an indirect effect of satisfaction with police visibility and community engagement on informal social control through social cohesion. Further, Lombardo and Donner (2018) found an indirect effect of the community policing intervention on informal social control through satisfaction with police. It seems it is not enough for the police to be a visible presence and engaged with the community; other downstream variables, such as trust and satisfaction with police, are also important to consider. These findings underline the importance of conducting longitudinal

studies to understand the interplay between different variables and how they interact over time to influence collective efficacy.

Of course, there are a number of limitations to this paper that should be acknowledged. First, most of the studies included in the review measured perceptions of police instead of actual police activity. How people feel about the police in their neighbourhood is an important consideration, but to understand the specific policing strategies that influence collective efficacy, more studies are needed that measure actual police activity (e.g., the number or visibility of patrols in an area, level of police–community engagement). Randomised field experiments that manipulate the quantity and type of policing, along with more longitudinal survey designs, should be priorities for future research. Second, for some of the policing measures there were only a few studies for which we could obtain effect sizes and include in the meta-analysis. Although it is possible to conduct a meta-analysis on a small number of studies, estimating between-study heterogeneity is difficult in this situation and may result in biased effect estimates (von Hippel 2015). The meta-analysis should be replicated when more studies become available.

Conclusions

This paper sought to systematically review the evidence base on the relationship between policing and collective efficacy. Findings seem to suggest that trust in police is key to understanding how police may foster collective efficacy within communities. While fairness, efficiency and effectiveness are often construed as distinct elements of policing behaviour or outcomes, the findings described above illuminate the essential links between them. To promote collective efficacy, that is, police need to demonstrate that they will come if summoned, be able to deal with whatever issue is at hand, and behave appropriately and fairly while doing so. While the studies described above do not address this question directly,

it is possible that failings in any one of these areas might inhibit people from engaging in informal social control.

The contribution of policing to collective efficacy seems primarily to be about supporting communities by providing a trustworthy presence and reassuring people that the police will be there if needed. What seems less important to collective efficacy is the police providing a source of legitimate authority towards which people orient themselves. It could be that collective efficacy arises from social processes into which police feed, but which are not established out of a sense of obligation that the community should support police in order maintenance activity. In other words, collective efficacy is not something that police can mandate (which is the power that legitimacy grants). This seems to support the idea that trust in police is 'socially enabling' and is implicated in people's relationships with each other, whereas legitimacy relates more to people's relationship with the police and the law. Future research should continue to unpack the relationship between policing and collective efficacy. In particular, more experimental and longitudinal studies are needed to understand how policing can contribute to collective efficacy.

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ⁱ An alternative argument proposed by some scholars is that when police are seen to be effective, residents may be less likely to exercise informal social control because they believe the police are capable of dealing with local issues on their own (Silver and Miller, 2004). As a result, police ineffectiveness may actually encourage informal social control actions because residents react to perceived police deficiencies to instil order in their communities (Kochel, 2018; Kubrin and Weitzer, 2003).

ⁱⁱ Police Foundation; Police Executive Research Forum; UK Home Office; UK College of Policing; Australian Institute of Criminology; Canadian Police College; New Zealand Police; US National Institute of Justice

ⁱⁱⁱ No new studies were found when the updated search was conducted. The lag in time between the first and second search was due to the first author going on maternity leave.

^{iv} We chose this date based on Sampson et al.'s (1997) seminal study which introduced the concept of collective efficacy to criminology.

^v We exclude studies that only measure social cohesion because (1) informal social control is at the core of the concept of collective efficacy and (2) social cohesion is a much broader (and non-task specific) concept that could have any number of other antecedents and consequents than those we are interested in here.

^{vi} We included this study (Lombardo and Donner, 2019) in the observational studies because the paper did not include randomised or matched treatment and control groups. The effect of the community policing initiative on informal social control was measured by including the presence of the initiative (based on an individual respondent's census tract) as an independent variable in a multi-variate regression.

^{vii} The Tuffin et al. (2006) study had 6 separate sites so each site is treated as a separate experiment.

^{viii} We calculated standardised mean differences for post-intervention scores only. We conducted a separate analysis using mean change scores (post-intervention minus pre-intervention scores) and results were similar and not statistically significant.

^{ix} Some studies included more than one measure of trust (e.g. Drakulich and Crutchfield, 2013; Kochel, 2012; Sargeant, 2017; Yesberg *et al.*, 2021) and more than one measure of community policing (Kochel and Gau, 2021; Yesberg *et al.*, 2021). For these studies, an average correlation was calculated and used in the meta-analysis.