

# **Investigating Serious Violent Crime: What works, what doesn't and for what crime types?**

Angela Higginson<sup>1</sup>  
Elizabeth Eggins<sup>2</sup>  
Lorraine Mazerolle<sup>3</sup>

Report to the Criminology Research Advisory Council  
Grant: CRG 43/13-14

**October 2017**

---

<sup>1</sup> Lecturer in Criminology, School of Social Science, The University of Queensland (UQ)

<sup>2</sup> Research Officer, Institute for Social Science Research (ISSR), UQ

<sup>3</sup> Australian Research Council Laureate Fellow/FASSA, ISSR, UQ

---

## Acknowledgements

---

The systematic review in this report was funded by a Criminology Research Grant awarded to Dr Higginson and Professor Mazerolle. The previous systematic search that identified eligible studies prior to 2009 was funded by the National Policing Improvement Agency (now College of Policing), United Kingdom. The initial stages of the Global Policing Database were funded by a College of Policing/Mayor's Office for Policing and Crime grant awarded to Dr Higginson, Ms Eggins, and Professor Mazerolle. We would like to gratefully acknowledge the assistance provided by a team of research assistants (Adele Somerville, Emina Prguda, Jenna Thompson, Kathryn Benier, Laura Bedford, Yan Lam Lo) and a large group of undergraduate student interns who have assisted with compilation of the GPD, with special mention for Katherine Brewster, Christine Carney, Jordan Gardner, Kayla Hargreaves, Arlia Horsborough, Lachlan McDougall, Camille Martin, Shantelle Wallace, Aimee Williams, and Natasha Wynne.

# Table of Contents

---

<b>Introduction</b>	<b>3</b>
Defining Serious Violent Crime and Police Investigative Techniques	3
Importance of the Review	4
Importance of Systematic Reviews and the Lack of Research Synthesis for Investigative Techniques and Serious Violent Crime	4
Research Objectives	6
<b>Methodology</b>	<b>7</b>
Criteria for Including Studies in the Review	7
Systematic Search and Extraction Strategy	9
Assessing Research for Eligibility	11
Statistical Procedures and Conventions	14
<b>Results</b>	<b>15</b>
Results of the systematic search and screening	15
Characteristics of eligible studies	16
Findings of eligible studies	16
Collection or testing of DNA	21
Collection or testing of physical evidence	24
Computer or file checks	27
Crime scene visits by detectives or medical practitioners	29
Detective present at post-mortem	30
Interview recording	31
Interviews conducted	34
Line-ups	36
Medical examiner qualifications	38
Specialised sexual offence interventions	40
<b>Summary of findings</b>	<b>48</b>
<b>Discussion</b>	<b>50</b>
<b>References</b>	<b>51</b>
<b>Appendix A1: Global Policing Database Compilation Overview</b>	<b>55</b>
<b>Appendix A2: Global Policing Database Compilation Progress</b>	<b>56</b>
<b>Appendix B1: NPIA Systematic Search and Screening Process</b>	<b>57</b>

<b>Appendix B2: NPIA Systematic Screening Process</b>	<b>58</b>
<b>Appendix C: Global Policing Database Search Strategy</b>	<b>60</b>
<b>Appendix D: Title and Abstract Screening Guidelines</b>	<b>61</b>
<b>Appendix E: Full-Text Eligibility Screening Guidelines</b>	<b>65</b>
<b>Appendix F: Inaccessible Documents</b>	<b>70</b>

## Introduction

---

Serious violent crime is a persistent and significant criminal justice issue (see Eisner, 2003; Fuller, 2013; Truman, Langton, & Planty, 2013; Wallace et al., 2009). In 2003 and 2008, the Australian Institute of Criminology delivered a clear message: despite the relatively low number of incidents compared to non-violent crime, serious violent crime offences account for a substantial portion of the costs of crime in Australia (Mayhew, 2003; Rollings, 2008). Moreover, a number of scholars have demonstrated a decline in police clearance of serious violent crime over recent decades (Horvath et al., 2001; Litwin & Xu, 2007; Riedel, 2008). Although investigation and responding to serious violent crime are core components of police work, the evidence-base for police investigative techniques for serious violent crime lacks the level of evaluation and synthesis seen for other policing interventions which have been predominantly assessed according to their impact on general crime and disorder.

This systematic review aims to redress this imbalance by conducting the first ever systematic review focusing on the effectiveness of techniques that police use to investigate serious violent crime. Our review examines the evidence on police investigative techniques for serious violent crime to determine what works, what doesn't, and for what crime types. Specifically, we systematically evaluate the impact of police investigative techniques on key police outcomes in the context of serious violent crime: offender identification, arrests, elicitation of confessions, convictions and case closure.

### Defining Serious Violent Crime and Police Investigative Techniques

There is variation in the way that 'serious violent crime' is operationalised in the literature and we note the conceptual ambiguity between what constitutes violent crime and what constitutes *serious* violent crime. The most common approach has been to provide an offence-based definition of serious violent crime which includes the following offences: murder, manslaughter, rape or other sexual assault, aggravated assault and robbery (Brame, Mulvey, & Piquero, 2001; Day et al., 2012; Kramer & Ulmer, 2002; Truman et al., 2013)<sup>4</sup>. We argue that a simple offence-based definition is the most pragmatic approach for this review, yet we do acknowledge that there are differences in the way that offences are defined and aggregated across jurisdictions and research. For example, research may distinguish between aggravated, domestic violence and general assault, whereas other research may group all assault offences in the one category. Therefore, while we adopt an offence-based definition in our review, the conceptual subtleties of what is meant by 'serious violent crime' are incorporated into our methodology and research synthesis.

Defining 'police investigative techniques' is more straightforward than defining serious violent crime and, based on policing literature, we define a police investigative technique to be any activity or strategy used by police to gather evidence in order to identify offenders, arrest offenders, elicit confessions, close cases or secure convictions (Newburn, 2007; Palmiotto, 2004; Stelfox, 2013). Examples include: collection and testing of DNA or forensic evidence, line-ups, interrogation and interview techniques, specialised task forces, deception detection techniques, facial composites, surveillance techniques and psychological profiling. To include both reactive

---

<sup>4</sup> See Ulmer & Bradley, 2006; Wallace et al., 2009; and Wellner 2013 for preliminary attempts to create measures of offence severity based on penalties and sentences.

and proactive criminal investigations, we define the police investigative period to be from the point that a serious violent crime comes to the attention of police (e.g., suspected, reported or detected) until the point when the case is either closed or transitioned to the judicial arm of the criminal justice system (Newburn, 2007; Palmiotto, 2004; Stelfox, 2013; United Nations Office on Drugs and Crime, 2006).

## **Importance of the Review**

As noted above, serious violent crime is a persistent and significant criminal justice issue. Police are at the frontline of controlling and responding to serious violent crime and a major part of their role in this respect is investigation (Newburn, 2007; Palmiotto, 2004; Roberts, 2007; Stelfox, 2013). The techniques police use to investigate serious violent crime play a large role in determining whether an offender is identified, arrested or makes a confession, which then impacts whether cases are cleared or a conviction is secured. While these are important outcomes for any type of crime, we suggest that the effective use of police investigative techniques to achieve these outcomes is particularly important for serious violent crime.

Ineffective investigation or unsolved serious violent crime can have large ramifications on multiple levels: for victims, the general public, the police and the criminal justice system. When serious violent offenders are not apprehended or cases are ineffectively investigated, victims may experience additional trauma (Riedel & Jarvis, 1998), there is a risk for additional serious violent crimes to be committed, or victims may be reluctant to report serious violent crimes in the future (Cole, 2007; Cronin et al., 2007, Turner & Kosa, 2003). These issues have important implications for the criminal justice system. For example, the deterrent effect attached to the apprehension, prosecution and conviction of serious violent offenders may be diminished and citizens may lose confidence in the police (Curry et al., 2013; Regoeczi et al., 2000). Yet despite criminal investigation forming a substantial portion of police work and the critical importance of solving and dealing with serious violent crime, we propose in the next section that the evidence-base for police investigative techniques and for serious violent crime lacks the level of synthesis seen for other areas of policing and general crime and disorder. We argue that this imbalance requires urgent attention.

## **Importance of Systematic Reviews and the Lack of Research Synthesis for Investigative Techniques and Serious Violent Crime**

In recent years there has been a resounding call for evidence-based criminal justice policy and practice (Bullock & Tilley, 2009; Meares & Barnes, 2010; Morgan & Homel, 2013; Sutton & Cherney, 2007). One result of this ‘what works’ movement is the growth of experimental research and systematic reviews aiming to identify best practice in criminal justice (e.g., see Mazerolle & Bennett, 2011; Petrosino et al., 2001; Sherman et al., 2006; Farrington & Welsh, 2005). For example, the Campbell Collaboration Crime and Justice Group – the key body for systematic reviews in the area of criminal justice – was formed in 2000 to facilitate the preparation and dissemination of systematic reviews on the effectiveness of criminal justice interventions in order “to inform criminal justice policies” (Campbell Collaboration, 2013). The push to evidence-based policy has also led to the formation of specialist academies and organisations (e.g., Academy of Experimental Criminology, Centre of Evidence-Based Crime Policy, and Australian Research Council Centre of Excellence in Policing and Security), and the development of innovative web-based tools and repositories (e.g., CrimeSolutions.gov; Higginson et al., 2015; Lum, Koper, & Telep, 2011).

Systematic review methods are at the forefront of evidence-based policy and practice. Systematic reviews provide a concise, yet comprehensive and robust summary of research

evidence and aim to assist policy-makers and practitioners identify the interventions that are most effective for particular problems (Welsh & Farrington, 2006). In the area of policing, there has been substantial synthesis of empirical literature to ascertain what works to control and prevent general crime and disorder. However, the evidence-base for police investigative techniques, particularly concerning serious violent crime, lacks the level of evaluation and synthesis seen for general crime and disorder and other policing approaches. In line with Weisburd and colleagues who argue that innovative policing approaches (e.g., community, hot spots, problem-oriented, pulling leavers policing) have received far more attention in the systematic review arena than traditional police practices (e.g., see Weisburd et al., 2013; Telep & Weisburd, in press), we argue that serious violent crime has also been neglected in systematic reviews of policing approaches compared to general crime and disorder (see also Puckett & Lundman, 2003).

Specifically, the Campbell Collaboration Crime and Justice Group has 19 systematic reviews registered that focus on policing. The majority of the reviews focus on general crime and disorder and only a five on violent crime outcomes specifically. Only three reviews focus on specific investigative techniques: interrogation techniques (Meissner et al., 2012), Geographical Information Systems (GIS) technologies (Hoover et al., 2010), and the use of DNA testing (Wilson et al., 2011). Meissner and colleagues (2012) examine the relative effectiveness of accusatorial and information-gathering interrogation techniques on the elicitation of confessions. The authors find that both interrogation techniques are effective for eliciting confessions in field studies where the accuracy of offenders' confessions could not be verified. However, analysis of laboratory experiments reveals that information-gathering interrogation techniques increase the probability of true confessions. Hoover et al.'s (2010) review has not yet been completed, but has reached protocol stage. Wilson, Weisburd and McClure's (2011) review examines the effectiveness of DNA techniques on case closure and the identification, arrest and convictions of offenders. These authors find that DNA testing is useful for improving the number of suspects identified, arrested and prosecuted across different types of crime. Specifically, the use of DNA databases is effective for closing property crime cases, and the use of DNA testing when investigating serious violent crimes is mainly effective, yet based on weak evidence. Although these reviews provide valuable information about the effectiveness of individual investigative techniques, they still do not allow valid comparisons between investigative techniques and do not focus on serious violent crime.

Although not a complete systematic review, Denning and colleagues (2009) conducted a systematic search of the literature concerning the investigation of serious violent crime (funded by the National Policing Improvement Agency). The search identified 938 pieces of research relating to the investigation of serious violent crime which had been conducted across a number of countries (United States, United Kingdom, Europe, Australia, and New Zealand) and revealed that the amount of research into serious violent crime investigative techniques has steadily increased since 1970. Over a quarter of the research identified used quantitative research designs, close to a third focused on investigation of murder, and smaller proportions examined techniques used to investigate other serious violent crimes such as manslaughter, infanticide, or sexual assault. The search identified research across a range of outcome measures, including arrest, laying of charges, conviction and failure to close cases. Denning and colleagues' (2009) research demonstrates the breadth and diversity of investigative techniques used in serious violent crime cases, as well as the sophistication of many of the research designs used in the studies identified. However, the research undertaken for the NPIA was for conducting a systematic search only and a subsequent review and synthesis of the evaluation evidence has never been undertaken. From the outset, the Denning et al. (2009) search was designed to scope the breadth of literature only.

Therefore, our examination of the current state of crime and justice systematic reviews reveals that there is currently no systematic review that examines the full range of investigative

techniques for serious violent crime. Without a concise and reliable synthesis of the extant research evidence, practitioners and policy-makers are limited in their ability to make sound evidence-based decisions about the comparative effectiveness of investigative techniques. Therefore, our systematic review aims to redress this evidence gap by assessing and synthesising the full range of police investigative techniques and their impact on identifying offenders, making arrests, eliciting confessions, securing convictions and closing cases in the area of serious violent crime.

## Research Objectives

The objective of this review is to systematically evaluate the impact of police investigative techniques on key police outcomes in the context of serious violent crime: offender identification, arrests, elicitation of confessions, convictions and case closure. To achieve this objective, we update Denning et al.'s systematic search and quantitatively synthesise the research evidence to determine the effectiveness of techniques police use to investigate serious violent crime. Specifically, our review addresses the following research questions:

1. What impact do police investigative techniques have on offender identification, eliciting confessions, making arrests, clearing cases and/or securing convictions in relation to serious violent crime?
2. Does the impact of investigative techniques vary by the type of serious violent crime under consideration?
3. Does the impact of investigative techniques vary by the type of technique utilised by police?



## Methodology

---

### Criteria for Including Studies in the Review

To be eligible for inclusion in our review, each piece of research must have reported on a quantitative impact evaluation of a police investigative technique in the context of a serious violent crime, and also utilised an eligible case-level outcome measure and an experimental or strong quasi-experimental research design for the impact evaluation. In the subsections that follow, we define the specific eligibility criteria implemented in our review.

#### *Types of interventions*

To be eligible for inclusion in this review, each piece of research must have evaluated a police investigative technique. We defined a police investigative technique to be any activity or strategy used by police to gather evidence in order to identify offenders, arrest offenders, elicit confessions, close cases or secure convictions (Newburn, 2007; Palmiotto, 2004; Stelfox, 2013). Examples include: collection and testing of DNA or forensic evidence, line-ups, interrogation and interview techniques, specialised task forces, deception detection techniques, facial composites, surveillance techniques and psychological profiling. We did not limit 'police' to sworn officers or detectives, but included any personnel employed by a police department (e.g., crime scene investigators; see Stelfox, 2013).

To include both reactive and proactive criminal investigations, we defined the police investigative period to be from the point that a serious violent crime comes to the attention of police (e.g., suspected, reported or detected) until the point when the case is either closed or transitioned to the judicial arm of the criminal justice system (Newburn, 2007; Palmiotto, 2004; Stelfox, 2013; United Nations Office on Drugs and Crime, 2006). We excluded research that reported on policing techniques for *detecting* serious violent crime rather than investigating a crime that has occurred or suspected to have occurred (e.g., COMPSTAT or crime mapping for planning preventative police activity).

We excluded omnibus interventions that consisted of departmental restructuring, the management and organisation of the criminal investigation function, and training programs (such as Domestic Violence training), unless the document also specifically reported on an evaluation of a component investigative technique. We further excluded interventions that were measured only as an index or latent variable (e.g., 'analytical methods' operationalised as an index of five different analytic techniques, or 'investigative effort' as a scale constructed from a Factor Analysis), as it is not possible to assess the impact of specific investigative techniques using these variables.

Finally, whilst we included studies that evaluate the investigative techniques of collecting various forms of evidence, we excluded studies that evaluate only the impact of the *presence* of evidence on case outcomes. We conceptualise the presence of evidence as the product of a successful investigative technique, and note that such studies do not evaluate the impact of the investigative technique in an unbiased manner. For example, following Wilson et al. (2011), we include studies that evaluate the impact on case outcomes of police testing for DNA, but exclude studies that examine whether arrest or prosecution is more likely in the presence of a positive DNA match.

#### *Types of outcome measures*

This review focuses on the impact of police investigative techniques on key serious violence crime case-level outcomes. Specifically, each study must have reported on one of the following

outcomes or an equivalent: offender identification, arrest, confession, conviction, or case closure. We also allowed for inclusion of outcomes relating to unintended effects should they be identified in the literature (e.g., false confession or conviction), but excluded research where the outcomes were based on perceptions of participants (e.g., police perceptions of investigative techniques leading to arrest).

### ***Types of serious violent crime***

As noted in the introduction, there is variation in the way that 'serious violent crime' is operationalised in the literature and we note the conceptual ambiguity between what constitutes violent crime and what constitutes *serious* violent crime. We adopted an offence-based definition of serious violent crime for this review, which includes the following offences: murder, manslaughter, rape or other sexual assault, aggravated assault and robbery. To account for the subtleties in how serious violent crime is both defined and reported, we include studies that do not specify whether or not the violent crime is explicitly labelled as serious. For example, if a study reported on an impact evaluation of different types of police interrogation techniques for eliciting confessions in violent crime cases, we included the study in our review.

Our review focuses on interpersonal violence and includes violence where the perpetrators or victims are individuals or groups of individuals (e.g., gangs). However, there are specific scenarios that we have excluded from the review because we argue that the crimes are conceptually different and require conceptually different prevention and control efforts than interpersonally driven violent crime (Higginson et al., 2013). The specific violent crimes that we excluded from the review are:

- Violence where the perpetrator is a corporation or organisation;
- Self-directed violence outcomes where acts or omissions are perpetrated by an individual against himself or herself (e.g., suicide or non-suicidal self-harm); and
- Collective violence where acts or omissions are perpetrated by a state or large organised group against another state or large organised group (e.g., terrorist activity, rioting, looting, smuggling, gang warfare, genocide, war, or political conflict).

If a study aggregated violent crimes with other crime types in their impact evaluation, the study was excluded from the review because there is no way of determining the impact of the investigative technique on the portion of the sample that contain violent crime.

### ***Types of research design***

To be eligible for this review, research must have been quantitative and utilise an experimental or quasi-experimental research design with a valid comparison group (no treatment, wait-list, business-as-usual, alternative treatment). Although randomised experimental designs are the most robust design for determining whether an intervention causes change in outcome measures, we included research across a range of other quasi-experimental designs which permit a counterfactual analysis by controlling for threats to internal validity (see Farrington, 2003; Shadish, Cook, & Campbell, 2002).

Eligible designs include:

- Randomised controlled trials (RCTs)
- Natural experiments
- Regression discontinuity designs
- Matched control group designs with or without pre-intervention baseline measures (propensity score or statistically matched)
- Unmatched control group designs with a pre-intervention baseline measure (difference-in-difference analysis)

- Designs using multivariate controls to account for differences between treatment and control groups (e.g., multiple regression analysis)
- Short interrupted time-series designs with control group (<25 pre- and 25 post-intervention observations (Glass, 1997))
- Long interrupted time-series designs without a control group (≥25 pre- and post-intervention observations)

To be included in the review, evaluations must have reported a standardised effect-size and the standard error of the effect size, or sufficient detail to allow a standardised effect size and its standard error to be calculated.

### ***Settings, timeframes, and language***

Our review includes interventions executed in any country or region; however we excluded research in languages other than English. We included research conducted between 1970 and 2014, whereby research between 1970 and part of 2009 consists of the 938 relevant documents identified in Denning et al.'s systematic search, and research between 2009 and August 2014 consists of research identified in Higginson et al.'s (2015) Global Policing Database systematic search.

## **Systematic Search and Extraction Strategy**

### ***Search strategy***

The corpus of literature for this review is drawn from two systematic searches. The first is the search conducted by Denning et al. (2009) and the second is that search conducted by Higginson et al. (2015) for the Global Policing Database (GPD). The GPD is designed to capture all published and unpublished experimental and quasi-experimental evaluations of policing interventions since 1950 without any restrictions on outcome measures, language of the research, or type of policing intervention. Appendix A summarises the GPD compilation process and progress status, Appendix B summarises Denning et al.'s (2009) systematic search and screening strategy, and Appendix C provides the GPD systematic search methodology.

As evidenced in Appendices A – D, the systematic searches are comprehensive to ensure relevant research has been captured for assessment in our review. To reduce publication and discipline bias, both systematic searches have a wide disciplinary scope and include search locations across a number of disciplines (e.g., criminology, law, political science, public health, sociology, social science and social work). In addition, the searches capture a comprehensive range of published (i.e., journal articles, book chapters, books) and unpublished literature (e.g., working papers, governmental reports, technical reports, conference proceedings, dissertations).

### ***Strategy for extracting and merging the systematic searches***

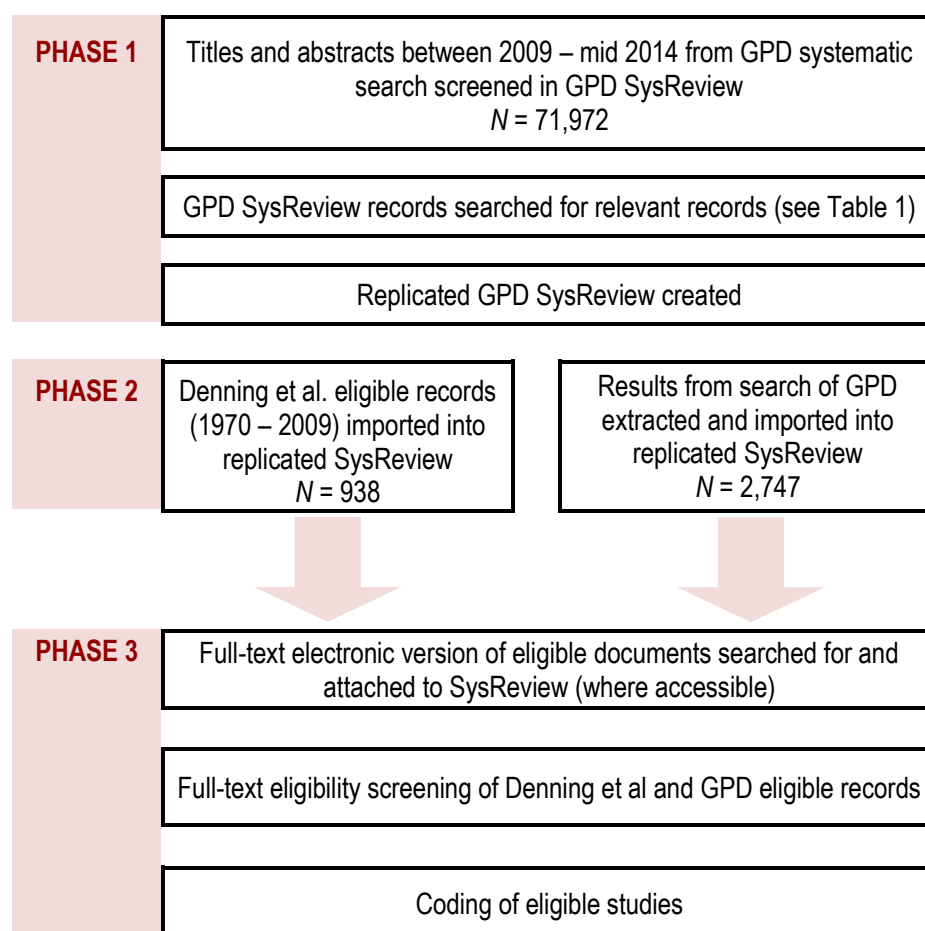
The results of the GPD systematic search were cleaned to remove duplicates and ineligible document types (e.g., book reviews, newspaper articles) and then the citation and abstract fields for all records retrieved from the search were imported into *SysReview* (systematic review management software; Higginson & Neville, 2014). The initial stages of eligibility screening (see below) were conducted in the GPD SysReview between October 2014 and June 2015. However, because the eligibility criteria for the initial stages of the GPD are broad in nature, the eligible corpus of research from the GPD would be about police, yet only a portion would be focused on police investigative techniques for serious violent crime. Therefore, using Denning et al.'s search strategy as a guide, we devised a search query to identify a corpus of potentially relevant

research within the GPD search results between dated between 2009 and 2014 (see Table 1). The search query combined serious violence, investigative and case-outcome terms with Boolean logic, whereby the search terms listed within each column in Table 1 were combined with OR and then AND was used to combine the sets of terms in each category. Therefore, each record identified in the GPD search results must have contained at least one search term from each category to be extracted and included in this review.

**Table 1. Search strategy for GPD extraction**

Violence Search Terms		Investigative Search Terms		Outcome Search Terms
murder*	"grievous bodily harm*"	"call handling"	"initial response*"	arrest*
manslaughter*	harm*"	composite*	Intelligence	closure*
rapist*	shoot*	"crime screening*"	interrogat*	confession*
rape*	stabbing*	"crime scene*"	interview*	convict*
assault*	infanticide*	detection*	investigati*	identif*
robber*	abuse*	DNA	lineup*	clearance*
violen*	death*	evidence	"line-up*"	
"serious crime*"	lethal*	"eye witness*"	"line up*"	
molest*	"gun crime*"	"eye-witness*"	profil*	
kill*	massacr*	eyewitness*	solvability	
wound*	beating*	"first response*"	squad*	
attack*	beater*	forensic*	surveillance	
homicide*	injur*	"house-to-house"	suspect*	
"sex crime*"	mug*	informant*	taskforce*	
batter*	burgl*	"initial contact*"		
	weapon*			

To combine the GPD search and Denning et al.'s (2009) search, we created a separate SysReview database that replicated the GPD up until the point of the second stage of full-text screen (see below). Denning et al. coded each eligible record according to research design and outcome, however, we did not have access to the coding sheets to enable us to only include documents with eligible research designs and eligible outcome(s). Therefore, we imported all eligible documents listed in Denning et al.'s final report ( $N = 938$ ) into the replicated SysReview. Following this, all studies identified from the search of the GPD ( $N = 2,747$ ) were imported into the replicated SysReview for final eligibility screening, coding and data extraction. Figure 1 provides a visual representation of the systematic search merge, as well as the subsequent screening stages.



**Figure 1.** Merge of Denning et al.’s (2009) and GPD systematic searches and overview of the systematic screening process for the review.

## Assessing Research for Eligibility

To identify eligible studies for the review, each unique record identified from the systematic search was screened. The following subsections describe how the records and were screened for eligibility and Figure 1 provides a visual representation of the process.

### *Title and abstract screening*

In this initial stage of assessing eligibility, the title and abstract of each record (document) retrieved is screened for relevancy according to predefined criteria. Following training, research staff screened each title and abstract for relevancy according to the following exclusion criteria (guidelines for criteria described in Appendix D)

- Document not after 1950
- Document not unique (i.e. a duplicate)
- Document not about police or policing
- Document not an eligible document type

All records extracted from the GPD systematic search had already been screened for relevancy prior to the merging of the NPIA and GPD search results. Screeners assessed the title and abstract on these criteria, starting from the first criterion, and excluded a record if the answer was unambiguously ‘No’ and stopped screening at the point of exclusion. For example, if a document was published before 1950, the screener would select this criterion and progress to

the next record (i.e., would not need to assess the record on the other criteria). As another example, if the document was published after 1950, was unique and was not about police or policing, the screener would exclude the document by selecting the policing criterion (see Figure 2).

**Abstract Screening**

User: Liz Eggins

Screening Number: 1 Your Language: English

Go to Title: 11 [Previous] [Next] Go to First Unscreened Title Starting at Title ID: 0 Skip Abstract

TitleID: 27 Reference Type: Journal Article Secondary Title: mediterranean journal of social sciences Year: 2014

Author(s): Z. V. U. Zondi, W. I.

Title: police brutality in post-apartheid south africa reviewed

Abstract: The objective of this paper was to revisit the issue of police brutality in post-apartheid South Africa, since it has recently become a highly contextual topic with polarising views. Some individuals have tried to justify the level of brutality by the South African police service, while others disagree with these views and perceive the issue as problematic. Apart from the literature review, questionnaires were formulated distributed to twenty individuals from the general public, in order to ascertain their perception regarding the issue. This questionnaire was structured in a way that would allow the individuals to not only state their opinion regarding the different aspects of the South African police service but to also enable the respondent to elaborate on their reasoning. The finding from the feedback obtained from ten respondents reveal that police brutality is perceived as a major problem in South Africa, and most individuals are perturbed by the current state of affairs. However, they feel very helpless in their ability to change the situation. Some respondents feel that it is only people in top positions in the police hierarchy or government that could influence the change that is required to improve the situation, in order to enhance the image of the South African Police Services, in such a way that communities could perceive them more as friends rather than enemies.

URL: <http://search.proquest.com.libraryproxy.griffith.edu.au/docview/154496396?accountid=14543> <http://hy8fy9j4b.search.serialssolutions.com/>

Document Language: English

Exclusion Criteria:

- Document is not dated after 1950
- Document is not unique
- Document is not about police or policing
- Tricky/needs mediation
- Not an eligible document type

Screening Number: 1

Screened by: Liz Eggins on: 4/11/2014

Title is eligible

Undo Completed Flag Locate Document Delete Screening

**Figure 2.** Screen shot of title and abstract screening record in SysReview.

Because Denning et al. (2009) screened the abstract of their search results for relevancy to police investigations (see Appendix B2), we automated the title and abstract screening stage for their search results by screening all records as eligible upon importing their search into the new SysReview database created for this review. However, if we identified that a record from their search was an ineligible document or contained research prior to 1970, we rescreened the record before progressing the record onto the full-text literature retrieval stage.

### ***Full-Text literature retrieval and full-text eligibility screening***

For each record not excluded at the title and abstract stage, we attached the full-text of record (if accessible) to the SysReview database. The full-text of all records was then screened for eligibility across two stages (screening guidelines provided in Appendix E). For Stage 1 full-text eligibility screening, documents were screening according to the following criteria:

- Document not after 1950
- Document not unique (i.e. a duplicate)
- Document does not contain a quantitative statistical comparison (bivariate or multivariate)

All documents screened as eligible from Stage 1 eligibility screening were then screened according to the following Stage 2 criteria:



- Document not about a serious violent crime
- Document does not report on an eligible outcome
- Document does not report on a police investigative technique
- Document does not contain a quantitative impact evaluation of a police investigative technique for eligible outcomes in the context of serious violent crime
- The impact evaluation does not utilise an eligible research design

**Document Screening**

User: Liz Eggins

Screening Number: 1

Go to Title: 564

Rescreen Select Titles | Skip Document (Select Titles)

Go to First Unscreened Title | Starting at Title ID: 0 | Skip Document

TitleID: 564 | ForeignLanguage: ☐

Full citation: Agnew, S. E., Powell, M. B., & Snow, P. C. (2006). An examination of the questioning styles of police officers and caregivers when interviewing children with intellectual disabilities. Legal and Criminological Psychology, 11(1), 35-53.

Document attachment: ☐ Needs to be ordered | Date ordered: | Date received: | ☐ Library holding

DocumentLink:

Screening Criteria:

Document is not dated after 1950

Document is not unique

Document does not contain a quantitative statistical comparison

This is tricky/Requires mediation

Complete Stage 1 Screening

Screening number: 1

Screened by: Angela Higgins on 31/07/2015

Document is NOT eligible

If other, give reason:

Could be useful for reference harvesting

Undo Completed Flag | Delete Screening

Document type:

**Figure 3.** Screen shot of full-text eligibility screening record in SysReview.

### Quality assurance

We implemented several processes to ensure the results of our systematic review are reliable. First, all research assistants and student interns completed standardised title and abstract screening, literature retrieval and Stage 1 full-text eligibility screening training. Second, all students or student interns completing screening were required to complete and obtain  $\geq 95\%$  accuracy on a screening test before beginning screening. Third, we cross-checked the work completed across stages throughout the project. For title and abstract screening and Stage 1 screening, we cross-checked a random sample of 10-15% of each screener's work for accuracy. For literature retrieval, we checked that all eligible records flowing through from title and abstract screening were (a) the correct document, or (b) documents that truly could not be obtained using available resources. As a final quality assurance measure, only the review leader (Higginson) and review manager (Eggins) completed Stage 2 eligibility screening and full-text coding.

**Full-text coding and data extraction**

Studies were coded in SysReview on the following fields:

- Country of intervention
- Year of publication
- Intervention name, type, and detail
- Crime type
- Participants
- Type of study, control condition, control matching
- Study description
- Outcome/s
- Effect size data

**Statistical Procedures and Conventions****Measures of treatment effect**

We calculated standardised effect sizes and their standard errors, using  $d$ , the Odds Ratio, and the correlation coefficient  $r$ , depending on the data provided in the original texts. All effect sizes were then translated to the Odds Ratio as a common metric for comparison. All standardised effect sizes were calculated in Stata 13.

**Methods of synthesis**

All syntheses were conducted using the *metan* command in Stata 13 (StatCorp, 2013), using the Log Odds Ratio for calculations, and then converting the results back to the more intuitive Odds Ratio and its 95% Confidence Intervals for interpretation.

When two or more conceptually similar interventions reported on conceptually similar outcomes, we conducted a random-effects meta-analysis using inverse variance weighting to combine the study results.

In some instances, a single study reported overlapping intervention effects which were not synthesised. For example, one study measured the impact of video recorded interrogations on confessions, and a measure of the impact of either video or voice recorded interrogations on either confessions or admissions. In these cases we do not consider the effects to be independent, and so do not conduct a meta-analysis, as this would artificially inflate the sample size and reduce the confidence intervals of the effect. In these instances we report on the individual effects without synthesis. Similarly, solo effect sizes that have no conceptual equivalents are also reported without synthesis.

Whilst we had aimed to conduct moderator analyses to examine the differential impact of investigative techniques on different crime types, there was insufficient data available for such analyses.



## Results

### Results of the systematic search and screening

Figure 4 shows the eligibility of studies through the various stages of screening. The search yielded a total of 3,686 documents, the titles and abstracts of which were then screened for potential eligibility. Of these documents, 2,280 were eligible for further examination. After extensive searching, a total of 1,900 English-language documents were able to be obtained (the documents that could not be obtained are reported in Appendix F). The full text of each document was then examined for eligibility in two stages: stage 1 assessed the document for date range, uniqueness, and the presence of a quantitative comparison, and stage 2 assessed the document for relevance to the research topic. After full text screening, 27 documents were eligible for coding and data extraction. Of these studies, 12 reported regression coefficients that could not be converted to standardised effect sizes using the data reported, leaving 15 records eligible for synthesis. Two of the documents were meta-analyses, from which the findings of two studies were extracted from each, bringing the total to 19 studies.

### Overview of eligible studies

The 15 eligible documents were:

1. Abrahams, N., Jewkes, R., Martin, L. J., & Mathews, S. (2011). Forensic medicine in South Africa: Associations between medical practice and legal case progression and outcomes in female murders. *PLoS ONE*, 6(12), e28620-e28620. doi: 10.1371/journal.pon
2. Alderden, M. A. (2008). *Processing of sexual assault cases through the criminal justice system* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global database. (UMI No. 3327392).
3. Alderden, M. A., & Ullman, S. E. (2012). Gender difference or indifference? Detective decision making in sexual assault cases. *Journal of Interpersonal Violence*, 27(1), 3-22. doi: 10.1177/0886260511416465
4. Bouffard, J. A. (2000). Predicting type of sexual assault case closure from victim, suspect, and case characteristics. *Journal of Criminal Justice*, 28(6), 527-542. doi: 10.1016/s0047-2352(00)00068-4
5. Clark, S. E., & Tunnicliff, J. L. (2001). Selecting lineup foils in eyewitness identification experiments: Experimental control and real-world simulation. *Law and Human Behavior*, 25(3), 199-216. doi: 10.1023/a:1010753809988
6. Davis, J. P., Valentine, T., Memon, A., & Roberts, A. J. (2014). Identification on the street: A field comparison of police street identifications and video line-ups in England. *Psychology, Crime and Law*, 21(1), 9-27. doi:10.1080/1068316X.2014.915322
7. Greenberg, B., Elliot, C. V., Kraft, L.P., & Procter, H.S. (1977). *Felony Investigation Decision Model: An Analysis of Investigative Elements of Information*. Retrieved from <http://babel.hathitrust.org/cgi/pt?id=mdp.39015031447777;view=1up;seq=7>
8. Hagemann, C. T., Stene, L. E., Myhre, A. K., Ormstad, K., & Schei, B. (2011). Impact of medico-legal findings on charge filing in cases of rape in adult women. *Acta Obstetricia Et Gynecologica Scandinavica*, 90(11), 1218-1224. doi: 10.1111/j.1600-0412.201
9. Heenan, M., & Murray, S. (2007). *Study of reported rapes in Victoria 2000-2003: Summary research report*. Melbourne, Australia: Statewide Steering Committee to Reduce Sexual Assault and Office of Womens Policy.
10. Kelley, K. D. (2008). *Police handling of sexual assault cases: The first formal decision* (Master's thesis). Available from ProQuest Dissertations & Theses Global database. (UMI No. 304580927)

11. Knight, K. M. (2009). *Justice is not blind: The role of race in law enforcement decisions and practices* (Doctoral dissertation). Retrieved from ProQuest Dissertation and Theses Global database. (UMI No. 3343118)
12. LaFree, G. D. (1981). Official reactions to social problems: Police decisions in sexual assault cases. *Social Problems*, 28(5), 582-594.
13. Schroeder, D. A., & White, M. D. (2009). Exploring the use of DNA evidence in homicide investigations: Implications for detective work and case clearance. *Police Quarterly*, 12(3), 319-342. doi: 10.1177/1098611109339894
14. Toon, C., & Gurusamy, K. (2014). Forensic nurse examiners versus doctors for the forensic examination of rape and sexual assault complainants: A systematic review. *Campbell Systematic Reviews* 2014:5 DOI:10.4073/csr.2014.5
15. Wilson, D., Weisburd, D., & McClure, D. (2011). Use of DNA Testing in police investigative work for increasing offender identification, arrest, conviction, and case clearance: A systematic review. *The Campbell Collaboration Library of Systematic Reviews*, 7(7).

### Characteristics of eligible studies

The documents were primarily from the United States (n=10), but were also drawn from Australia (n=1), Norway (N=1), and South Africa (n=1), UK (n=2). From the 15 eligible documents we extracted data for 18 studies and 111 standardised effect sizes, relating to six broad crime categories and 13 intervention categories.

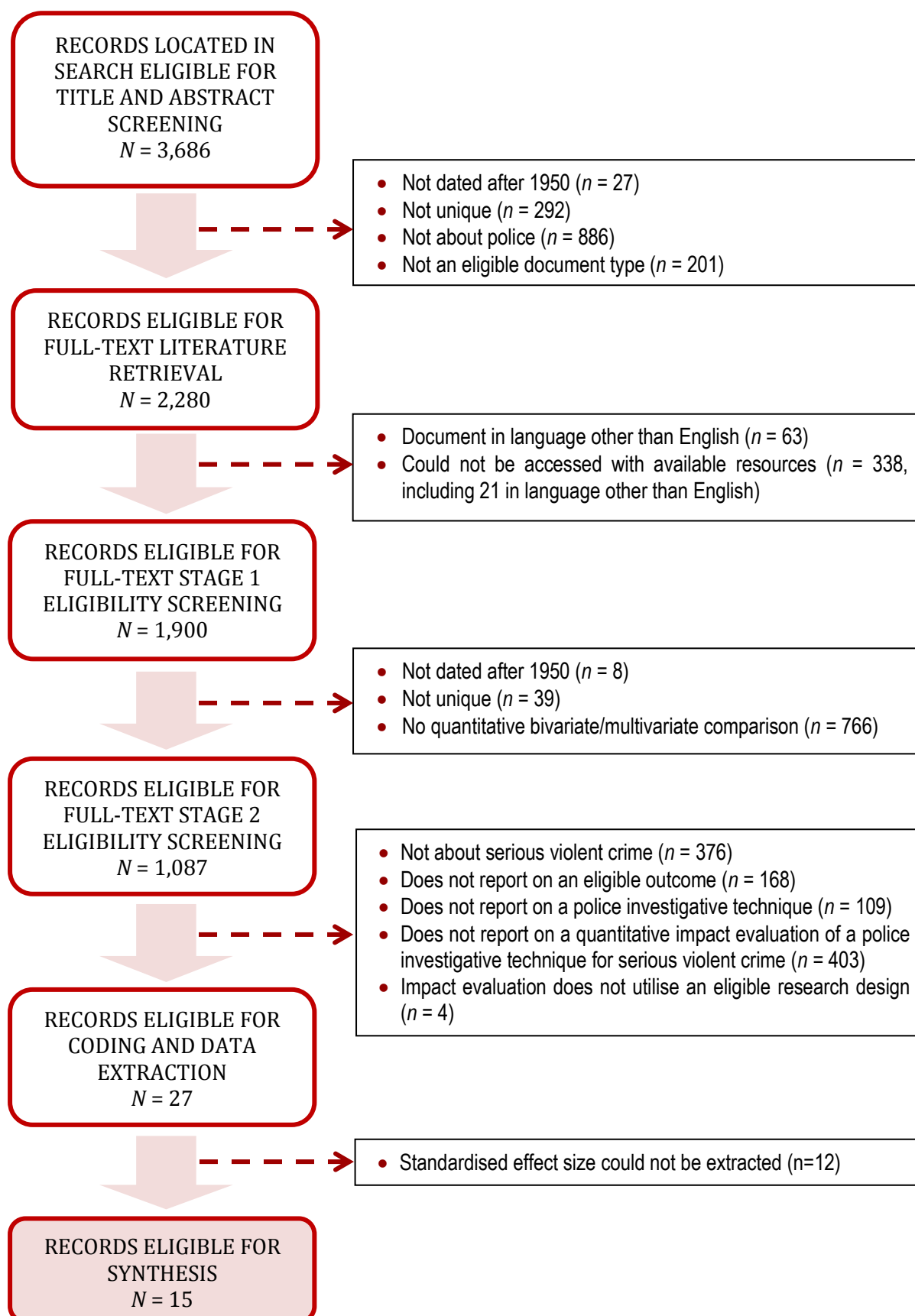
One study used a randomised control experiment, three studies controlled for victim, case or organisational characteristics, and in the remaining 11 studies the control group was matched on crime type alone. This introduces the possibility of selection bias to these studies, as certain characteristics of the crime or the victim may correlate both with the use of the intervention *and* with a particular outcome.

Tables 1 to 3 show the range of crimes, interventions, and outcomes coded, and the number of effect sizes coded for each, and table 4 gives a brief overview of the aims of each eligible study. Table 5 shows the distribution of effect sizes across the various investigative techniques, by study name.

### Findings of eligible studies

The majority of eligible studies reported positive impacts of the evaluated investigative techniques on serious violent crime outcomes. However, due to the large number of different techniques and outcomes examined, many of the effects are only supported by a small number of studies, making generalisation from these effects less robust. This is compounded by the potential for selection bias from studies where the control group was not matched by randomisation or multivariate matching, and by the fact that some studies only reported statistically significant results in their models.

In the following section, we summarise the impact of the various interventions across the range of outcomes, presenting Odds Ratios (OR) and 95% Confidence Intervals (CI) and using forest plots for illustration of the overall effect where more than one study is included.



**Figure 4.** Prisma flowchart for systematic search results (Moher et al., 2009).

**Table 1. Crime category coded in eligible studies**

Crime category	Effect sizes
Carjacking	1
Homicide	46
Robbery	12
Serious assault	1
Serious violent crime (aggregate)	11
Sexual assault	39

**Table 2. Intervention category coded in eligible studies**

Intervention category	Effect sizes
Collection or testing of DNA	15
Collection or testing of physical evidence	26
Computer or file checks	6
Crime scene visits	2
Crime scene visits by medical professional	2
Detective present at post-mortem	1
Interviews recorded	11
Interviews conducted	5
Line-ups	6
Medical examiner qualifications	6
SANE trained detectives	3
Sex offence unit	2
Sexual assault screening (including SANE)	25

**Table 3. Outcome category coded in eligible studies**

Crime category	Effect sizes
Admission / confession	3
Arrest	8
Case cleared or closed	10
Charged	21
Convicted	26
Dismissed	1
Exceptional closure	2
Felony charge	1
Guilty plea	1
Hung jury	1
Plea bargain	3
Police drop / unfound case	7
Presented to prosecution	6
Prosecuted	7
Sentence length	2
Suspect identified	6
Victim withdraws	5

**Table 4. Overview of eligible document aims**

Study Description
<b>Abrahams et al., 2011.</b> This retrospective national study of homicides used data from mortuary files, autopsy reports and police interviews to explore the epidemiology of female murder in South Africa (by partners), and to describe and compare autopsy findings, forensic medical management of cases and the contribution of these to legal outcomes.
<b>Alderden &amp; Ullman, 2012.</b> Study used police case and investigatory files on criminal sexual assault cases involving adult female victims reported to a large Midwestern police department in 2003. Examined the impact of victim, suspect, incident and detective characteristics on arrest.
<b>Alderden, 2008.</b> Examined criminal sexual assaults and aggravated criminal sexual assault cases reported to the Chicago PD, to determine whether various evidence-based and extralegal factors influenced case outcomes. Investigative technique examined was the use of a sexual assault screening kit.
<b>Bouffard, 2000.</b> Examined the effect of individual and case characteristics on police outcomes in a sample of felony sexual assault cases from a US suburban/urban county. Investigative technique was victims consenting to undergo sexual assault exam. Study controlled for case and individual characteristics.
<b>Clark &amp; Tunnicliff, 2001.</b> This study examines the impact of the control line-up condition used in lab-based experimental studies of eyewitness identification. The study examined the differential impact of selecting a perpetrator-absent line-up where foils were selected based on their similarity to the real perpetrator, vs where the foils are selected based on a match to an innocent suspect.
<b>Davis et al., 2014.</b> This study examined the differential effectiveness of three forms of suspect identification - mugshots, street identification, and video line-ups - using robbery data from three English police forces.
<b>Greenberg et al., 1977.</b> Study undertaken in Oakland, USA to determine the elements of investigation leading to offender identification and case solution by investigative personnel, and assess the validity of decision models.
<b>Hagemann et al., 2011.</b> This study assesses the impact of the medical documentation and biological trace evidence in rape cases on the legal process, using police and hospital data from police reported cases of rape in Norway.
<b>Heenan &amp; Murray, 2007.</b> Using Australian police data and corresponding case narratives from Sexual Offences and Child Abuse Unit & Criminal Investigation Unit members, this study examined rape investigations and the factors that appeared to influence the outcomes.
<b>Kelley, 2008.</b> Examined case & investigative factors predicting outcomes of sexual assault cases in a Midwestern town with an operating Sexual Assault Nurse Examiner (SANE) program.
<b>Knight, 2009.</b> This study investigates the effect of video recording custodial interrogations on legal outcomes. The police department in a small city in Michigan was the pilot site for the study and data was collected for 3 months before and after implementation.
<b>LaFree, 1981.</b> Analyses forcible sex offences reported to police in a large Midwestern city over 6 years. Aimed to determine the most important determinants of arrest, charge seriousness, and felony screening.
<b>Schroeder &amp; White, 2009.</b> Study examines NYPD case files for Manhattan homicides to investigate how often detectives used DNA evidence in the course of their investigations, as well as how its use influenced the likelihood of case clearance.
<b>Toon &amp; Gurusamy, 2014.</b> Systematic review and meta-analytic synthesis of Sexual Assault Nurse Examiner program impacts. For this review we extract the effect sizes from the two included studies that reported on eligible outcomes.
<b>Wilson et al., 2011.</b> Systematic review and meta-analysis to synthesise existing evidence on the effectiveness of DNA testing as part of routine police investigative practice, compared to other more traditional forms of investigation. Effect sizes from three studies that analysed DNA testing in serious violent crime cases were extracted.

**Table 5. Distribution of effect sizes by investigative technique and study**

InterventionType	Abrahams et al., 2011	Alderden & Ullman, 2012	Alderden, 2008	Bouffard, 2000	Clark & Tunnicliff, 2001	Davis et al., 2014	Greenberg et al., 1977	Hagemann et al., 2011	Heenan & Murray, 2007	Keeley, 2008	Kelley, 2008	Knight, 2009	LaFree, 1981	Schroeder & White, 2009	Toon & Gurusamy, 2014 - Campbell, 2012	Toon & Gurusamy, 2014 - Kelly, 2004	Wilson et al., 2011 - Briody, 2004	Wilson et al., 2011 - Schroeder, 2007	Wilson et al., 2011 - Tully, 1998	Grand Total
Collection or testing of DNA	2							1									5	1	6	15
Collection or testing of physical evidence	22						3	1												26
Computer or file checks							3							3						6
Crime scene visits	2																			2
Crime scene visits by medical practitioner	2																			2
Detective at postmortem														1						1
Interviews recorded												11								11
Interviews conducted										3				2						5
Line-ups					1	5														7
ME qualification	6																			6
SANE trained detective											3									3
Sex offence unit													2							2
Sexual assault screening		1	4	5					2	3	6				2	2				25
Grand Total	34	1	4	5	1	5	6	2	2	6	9	11	2	6	2	2	5	1	6	111

## Collection or testing of DNA

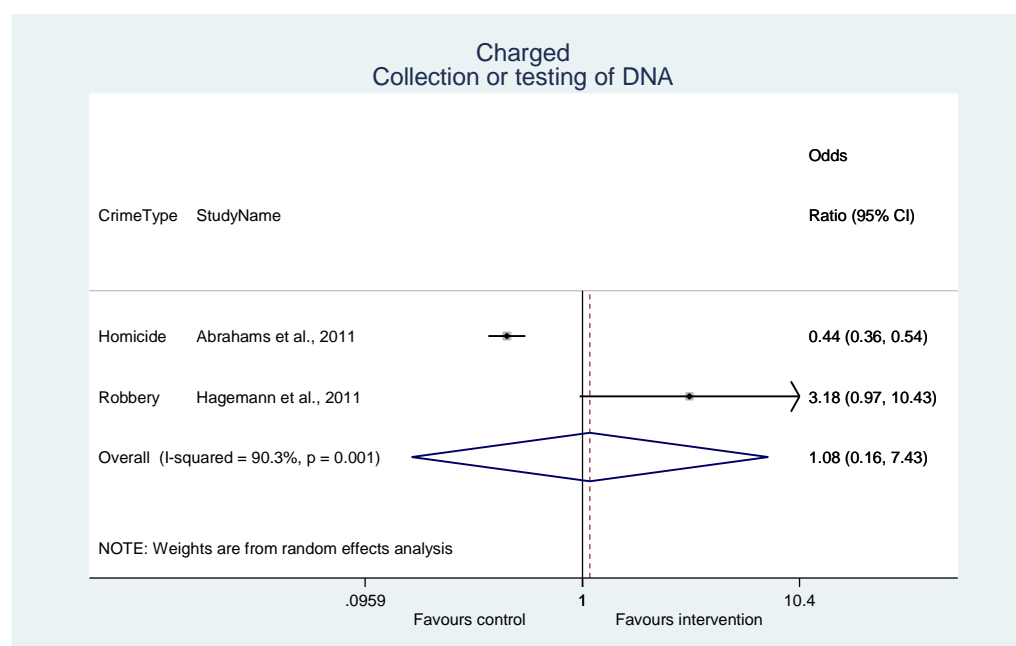
Five studies evaluated the impact of the collection or testing of DNA evidence on homicide, sexual assault, robbery, and serious assault cases (Abrahams et al., 2011; Hagemann et al., 2011; Wilson et al., 2011 – 3 studies from meta-analysis). Overall, the collection or testing of DNA was associated with a significant increase in conviction and sentence length; charges laid, prosecution and plea bargains were not significantly impacted by the use of DNA; and the use of DNA was associated with a significant decrease in case clearance outcomes.

### Case clearance

One study reported on the impact of collecting DNA prior to the arrest of a suspect on case clearance in homicide cases (Wilson et al., 2011 – data from Schroeder, 2007)), and demonstrates a reduction in case clearance in the treatment group (OR: 0.100; CI: 0.060 – 0.167). Wilson et al. (2011) report that this impact was most likely due to methodological weaknesses, as this study did not control for factors influencing the use of the intervention, which was only conducted in a small, select, number of cases. This finding may demonstrate the limited applicability of DNA testing to homicide.

### Charge

Two studies examined the impact of collecting or testing DNA on the charging of suspects; one in the case of homicide (Abrahams et al., 2011) and the other in robbery (Hagemann et al., 2011). There was a significant negative impact on charges in homicide cases (OR: 0.44; CI: 0.36 – 0.54) and a non-significant positive impact on robbery cases (OR: 3.18; CI: 0.97 – 10.43). As figure 5 demonstrates, in the synthesis these effects cancel one another out to show an effect that is not significantly different from null (OR: 1.08; CI: 0.16 – 7.43), although once again, if we examine the impact on homicide separately, there is evidence that DNA collection and testing is related to a lessened likelihood of charges being laid.

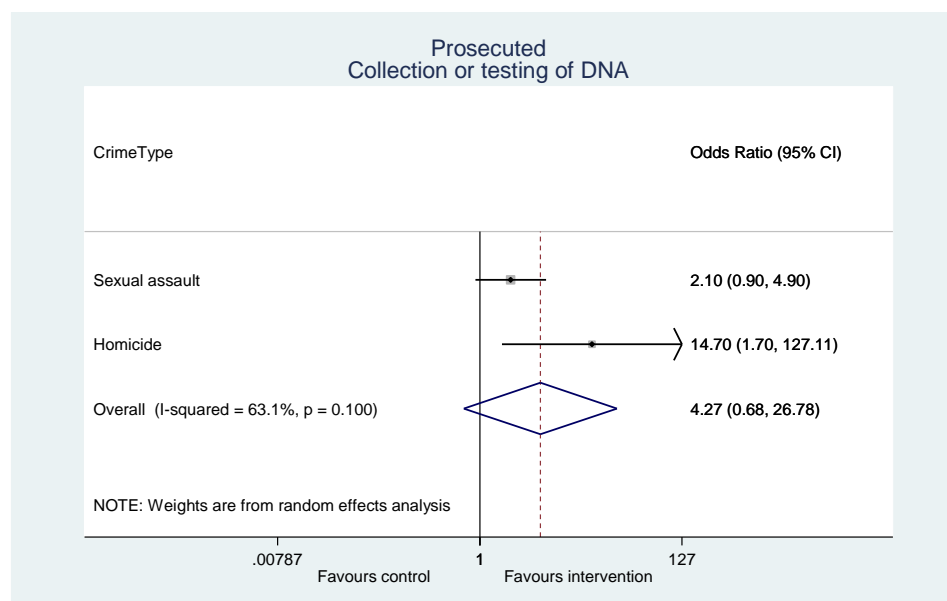


**Figure 5.** Meta-analysis of the impact of collection or testing of DNA on charges laid

### Prosecuted

One study provided effect sizes for the impact of collecting or testing of DNA on the prosecution of suspects in sexual assault and homicide (Wilson et al., 2011 – data from Briody, 2004). As figure 6 shows, there was a positive, but not statistically significant, increase in prosecution in sexual assault cases (OR: 2.10; CI: 0.90 – 4.90) and a significant positive increase for homicide

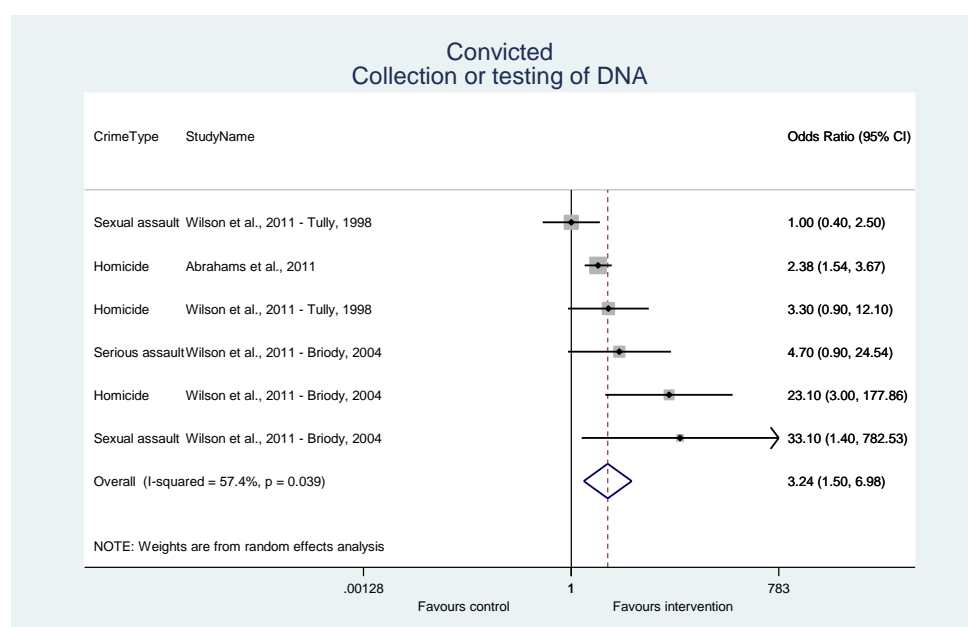
cases (OR: 14.70; CI: 1.70 – 127.11), but again, when synthesised we see that the impact is not significantly different from null (OR: 4.27; CI: 0.68 – 26.78).



**Figure 6.** Meta-analysis of the impact of collection or testing of DNA on prosecution

### Convicted

Three studies reported six effect sizes for suspect conviction after collecting or testing of DNA, in sexual assault, homicide, and serious assault cases (Abrahams et al., 2011; Wilson et al., 2011 – data from Briody, 2004 & Tully, 1998). As figure 7 shows, five of the six effect sizes were positive, and the overall synthesised effect is an estimated threefold increase in the odds of conviction when DNA was collected or tested (OR: 3.24; CI: 1.50 – 6.98).



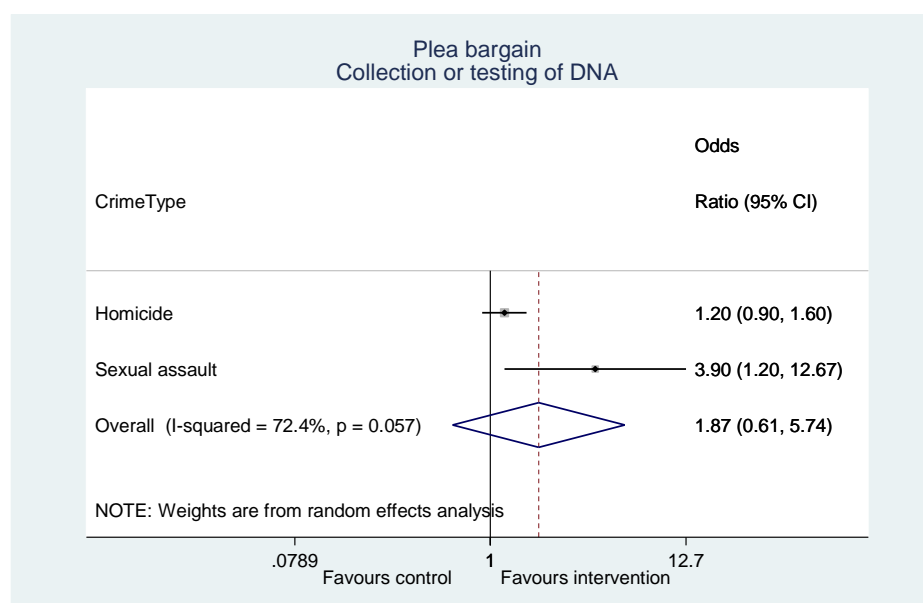
**Figure 7.** Meta-analysis of the impact of collection or testing of DNA on conviction

### Plea bargain

One study reported effect sizes for the impact of collection or testing of DNA on the odds of a plea bargain being made, in homicide or sexual assault cases (Wilson et al., 2011 – data from



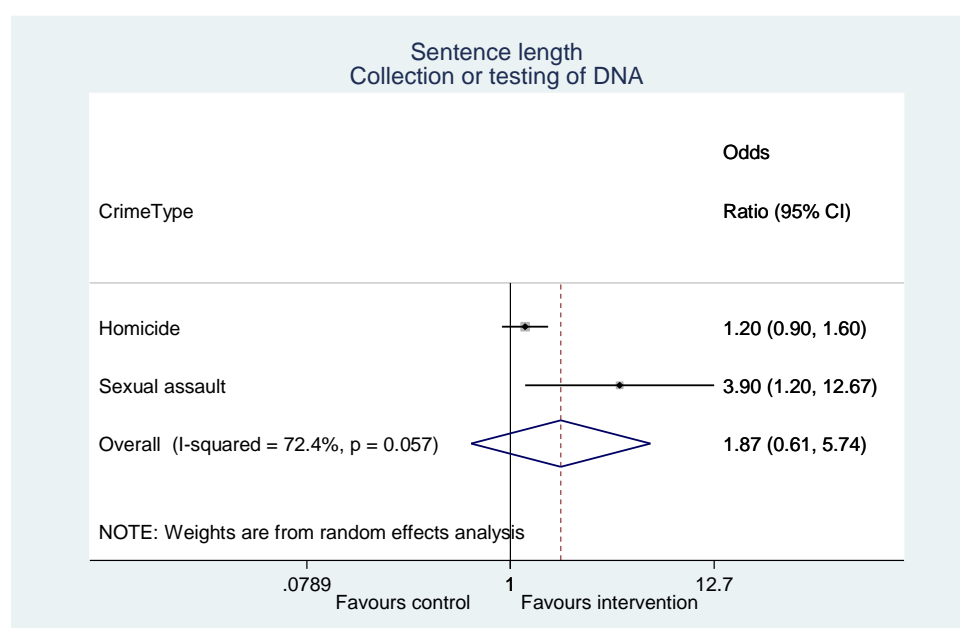
Tully, 1998). There was no significant impact in homicide cases (OR: 1.20; CI: 0.50 – 1.60), but in sexual assault cases, use of DNA was associated with almost four times the odds of a plea bargain being made (OR: 3.90; CI: 1.20 – 12.67). As figure 8 shows, when synthesised over offence type there was no significant impact of the use of DNA on plea bargains (OR: 1.87; CI: 0.81 – 5.74).



**Figure 8.** Meta-analysis of the impact of collection or testing of DNA on plea bargain

### ***Sentence length***

One study reports on the impact of collection or testing of DNA on sentence length in sexual assault, and homicide cases (Wilson et al., 2011 – data from Tully, 1998). The effect sizes reported in this document were the same for both plea bargain and sentence length outcomes. As figure 9 shows, there was no significant impact in homicide cases (OR: 1.20; CI: 0.50 – 1.60), but in sexual assault cases, use of DNA was associated with almost four times the odds of increased sentence length (OR: 3.90; CI: 1.20 – 12.67). When synthesised across offence type there was no significant impact of the use of DNA on sentence length (OR: 1.87; CI: 0.81 – 5.74).



**Figure 9.** Meta-analysis of the impact of collection or testing of DNA on sentence length

### **Collection or testing of physical evidence**

Three studies provided effect sizes of the impact of collecting or testing physical evidence in homicide, robbery, and sexual assault cases. The studies assessed the impact of these evidence types on case closure, arrest, charge, and conviction outcomes.

Crime technicians at the scene was associated with three times the odds of clearance in robbery cases, and almost double the odds of arrest. Taking fingerprints was associated with an increased odds of arrest in robbery cases.

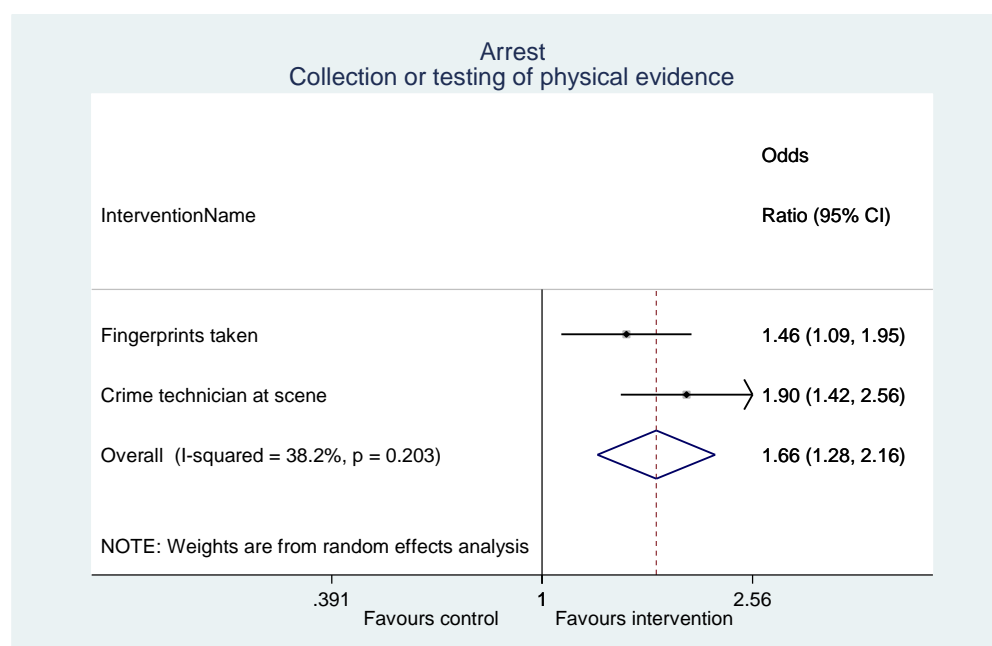
There were mixed findings on the impact of collecting or testing physical evidence in homicide cases. Collecting toxicology specimens was associated with decreased odds of charge and conviction. Collecting genital swab, nail scrapings, or head hair specimens was associated with decreased odds of charge, but an increased odds of conviction. Performing an autopsy at an academic centre was associated with decreased odds of charge but had no significant impact on conviction, whilst having a full autopsy performed had no significant impact on charge but decreased the odds of conviction. Collecting histology or clothes specimens had no significant impact on either charge or conviction. Taking crime scene or forensic photos, or victim blood alcohol increase the odds of both charge and conviction.

### ***Case cleared***

One study (Greenberg et al., 1977) found that the odds of case clearance were more than three times higher in cases where the crime technician attended the scene (OR: 3.10; CI: 2.29 – 4.20).

### ***Arrest***

One study examined the impact on robbery arrests of two different types of physical evidence collection or testing – taking fingerprints and having a crime technician at the scene (Greenberg et al., 1977). As figure 10 demonstrates, both interventions show a significant positive impact on arrest (fingerprints OR: 1.46; CI: 1.09 – 1.95; crime technician OR: 1.90; CI: 1.42 – 2.56), and the averaged effect of these interventions shows a 66% increase in the odds of arrests (OR: 1.66; CI: 1.28 – 2.16).



**Figure 10.** Meta-analysis of the impact of collection or testing of physical evidence on robbery arrest

### Charged

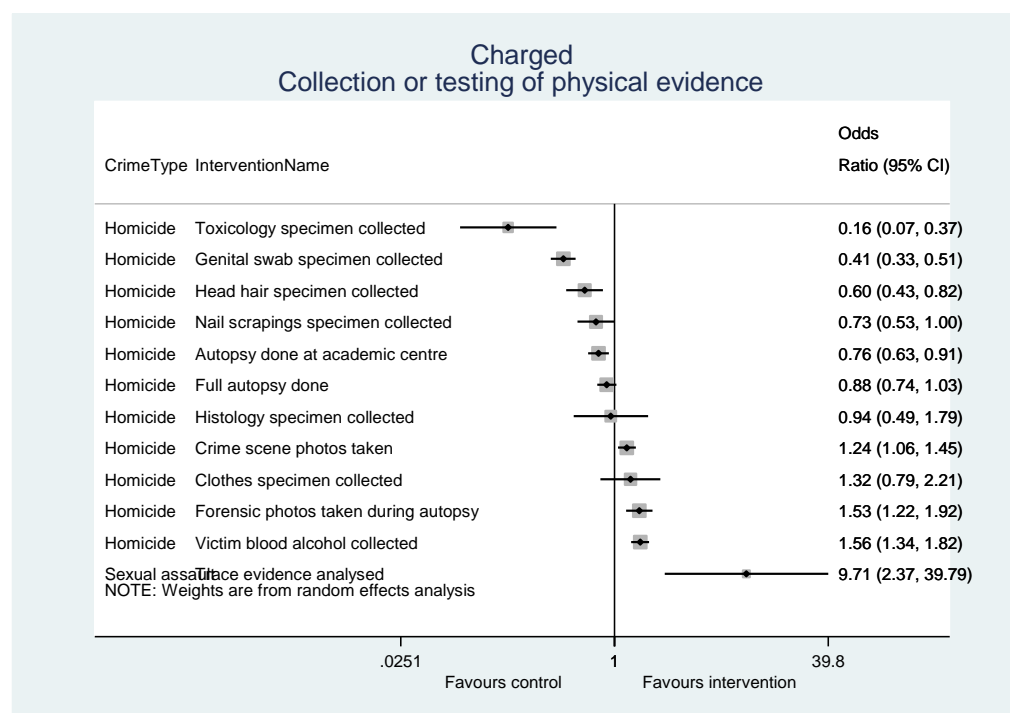
Two studies examined the impact of collecting or testing physical evidence on the likelihood of a charge being laid in cases of homicide (Abrahams et al., 2011) and sexual assault (Hagemann et al., 2011). As figure 11 shows, the findings were varied, depending on the type of evidence gathered.

For homicide cases, three of the eleven types of evidence analysed were significantly associated with higher odds of charges being laid: crime scene photos (OR: 1.24, CI: 1.06 – 1.45); forensic photos during autopsies (OR: 1.53; CI: 1.22 – 1.92); and victim blood alcohol (OR: 1.56; CI: 1.34 – 1.82).

Five types of evidence were associated with a significant reduction in the odds of homicide charges being laid: toxicology collection (OR: 0.16; CI: 0.07 – 0.37); collection of genital swabs (OR: 0.41; CI: 0.33 – 0.51); collection of head hair (OR: 0.60; CI: 0.43 – 0.82); collection of nail scrapings (OR: 0.73; CI: 0.53 – 0.996); and having an autopsy done at an academic centre (OR: 0.76; CI: 0.63 – 0.91).

Three interventions showed no significant impact on charges in homicide cases: histology specimen collection (OR: 0.94; CI: 0.49 – 1.79); clothes specimens collection (OR: 1.32; CI: 0.79 – 2.21); and having a full autopsy performed (OR: 0.88; CI: 0.74 – 1.03).

In cases of sexual assault (Hagemann, et al., 2011), there was a strong positive relationship between the odds of charges being laid and the analysis of trace evidence (OR: 9.71; CI: 2.37 – 39.79).



**Figure 11.** Meta-analysis of the impact of collection or testing of physical evidence on charges

### Convicted

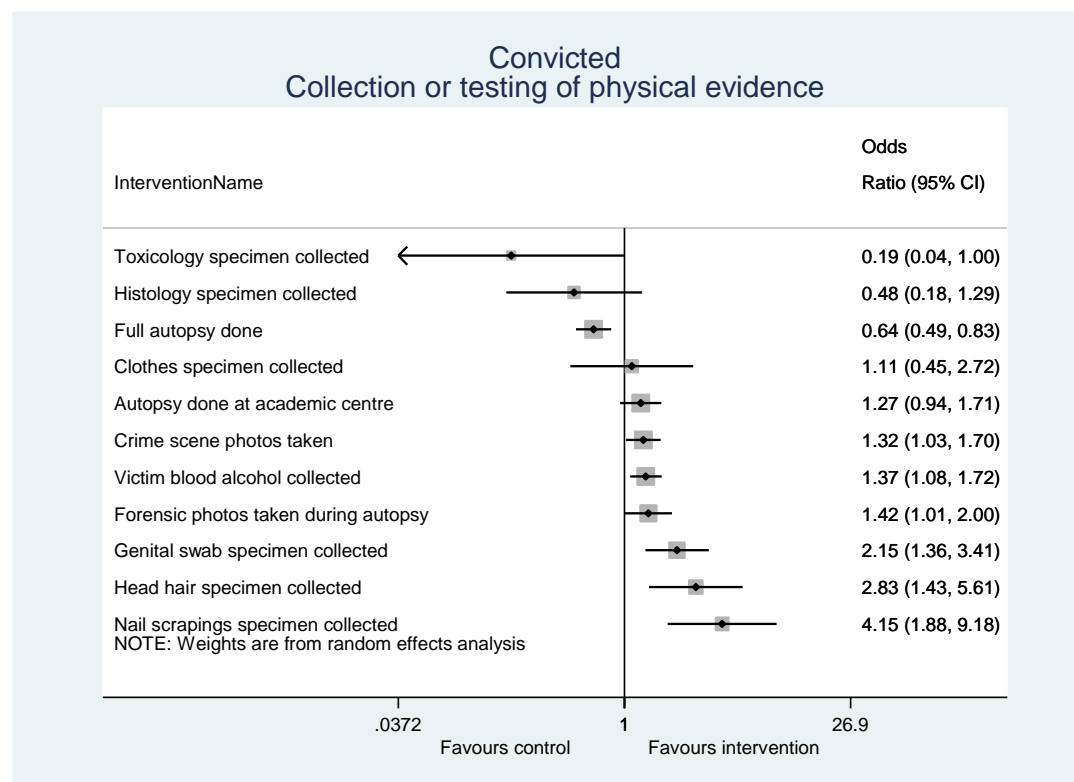
One study (Abrahams et al., 2011) examined the impact of eleven types of physical evidence on homicide convictions. Figure 12 shows the effect sizes.

Six of the eleven types of evidence analysed were significantly associated with higher odds of conviction: crime scene photos (OR: 1.32; CI: 1.03 – 1.70); forensic photos during autopsies (OR: 1.42; CI: 1.01 – 2.00); victim blood alcohol collected (OR: 1.37; CI: 1.08 – 1.72); collection of

genital swabs (OR: 2.15; CI: 1.36 – 3.41); collection of head hair (OR: 2.83; CI: 1.43 – 5.61); and collection of nail scrapings (OR: 4.15; CI: 1.88 – 9.18).

Having a full autopsy performed was associated with a significant reduction in the odds of homicide charges being laid (OR: 0.64; CI: 0.49 – 0.83).

Four interventions showed no significant impact on charges in homicide cases: toxicology collection (OR: 0.19; CI: 0.04 – 1.00); histology specimen collection (OR: 0.48; CI: 0.18 – 1.29); clothes specimens collection (OR: 1.11; CI: 0.45 – 2.72); and having an autopsy done at an academic centre (OR: 1.27; CI: 0.94 – 1.71).



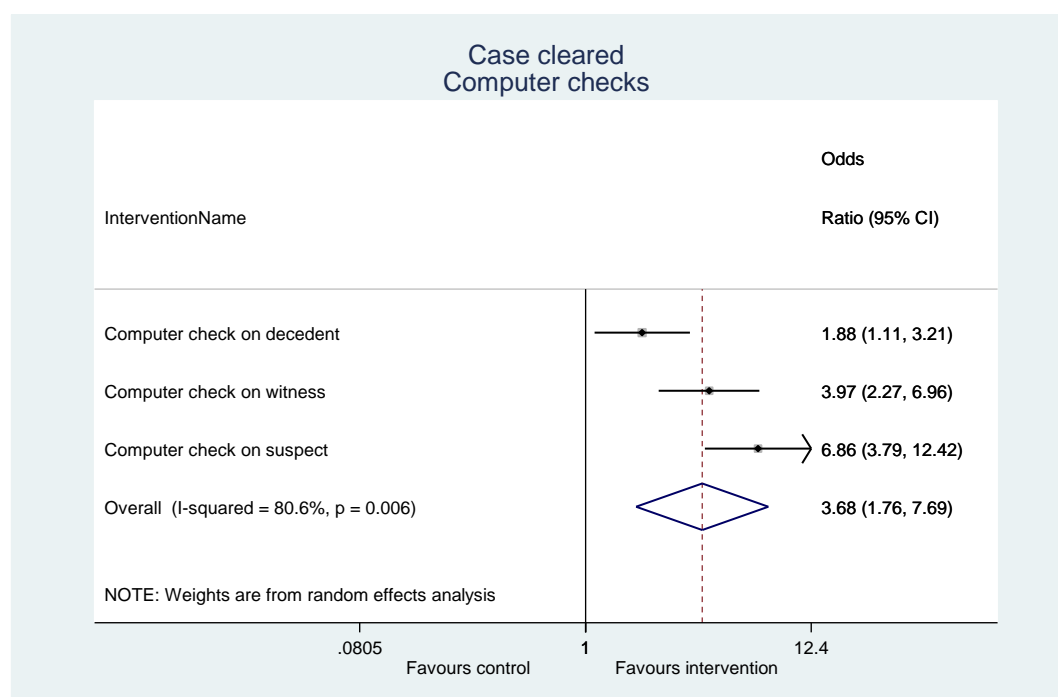
**Figure 12.** Meta-analysis of the impact of collection or testing of physical evidence on homicide conviction

## **Computer or file checks**

Two studies examined the impact of performing computer or file checks on persons, vehicles, decedents, witnesses or suspects (Greenberg et al., 1977; Schroeder & White, 2009). On average, running computer checks on the deceased, witnesses or suspects in homicide cases was associated with more than three times the odds of case clearance, while running file checks on persons, vehicles or vehicle registrations had no significant association with arrest in robbery cases.

### ***Case cleared***

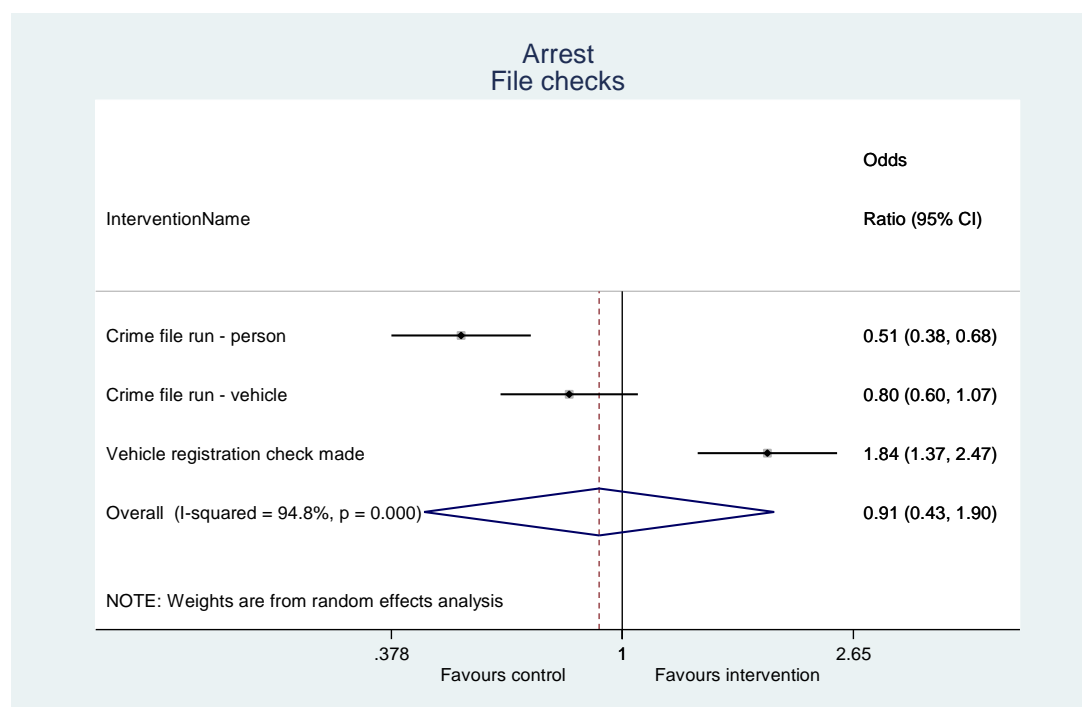
One study (Schroeder & White, 2009) examined the impact of three types of computer checks on the clearance of homicide cases. As figure 13 shows, all three types were significantly associated with increased crime clearance, with an average effect showing an increase of more than three times the odds of clearance compared to cases where these checks were not run (OR: 3.68; CI: 1.76 – 7.69). Running a computer check on the deceased was associated with almost doubling the odds of clearance (OR: 1.88; CI: 1.11 – 3.21); a computer check on witnesses was associated with almost four times the odds of clearance (OR: 3.97; CI: 2.27 – 6.96); and running a computer check on a suspect was associated with almost a seven-fold increase in the odds of homicide case clearance (OR: 6.68; CI: 3.79 – 12.42).



**Figure 13.** Meta-analysis of the impact of computer checks on case clearance in homicide

### ***Arrest***

One study (Greenberg et al., 1977) reported the impact of three different types of file checks on arrests in robbery cases, the average effect of which was not significant (OR: 0.91; CI: 0.43 – 1.90). As figure 14 shows, there was significant heterogeneity in the results, according to the subject of the check. Running a crime file on a person of interest was associated with a halving of the odds of arrest (OR: 0.51; CI: 0.38 – 0.68); running a crime file on a vehicle had no significant impact on arrest (OR: 0.80; CI: 0.60 – 1.07); whilst running a vehicle registration check almost doubled the odds of arrest in robbery cases (OR: 1.84; CI: 1.37 – 2.47).



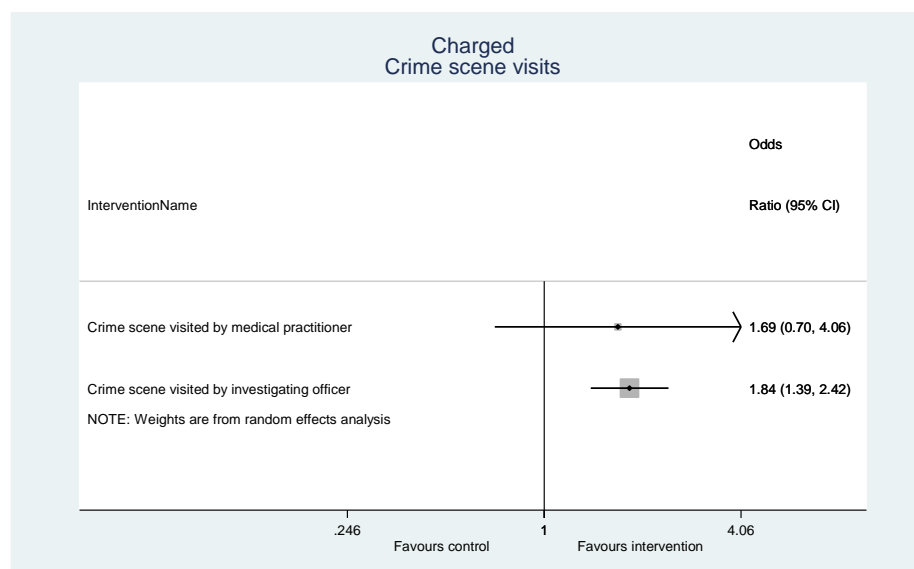
**Figure 14.** Meta-analysis of the impact of file checks on arrests in robbery

### **Crime scene visits by detectives or medical practitioners**

One study (Abrahams et al., 2011) examined the impact of crime scene visits by detectives or medical examiners on the outcomes in homicide cases. They found that whilst detective visits to the crime scene increased the odds of charges and conviction, there was no significant effect of having medical practitioners attend the crime scene.

#### ***Charged***

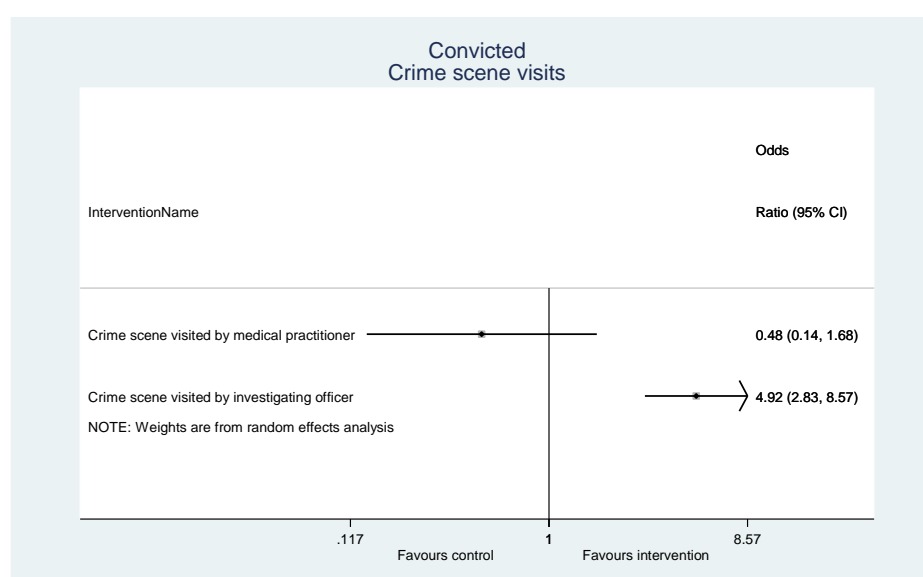
Homicide crime scene visits by detectives was associated with almost double the odds of charges being laid (OR: 1.84; CI: 1.39 – 2.42). In contrast, crime scene visits by a medical practitioner were not significantly associated with charges laid, (OR: 1.69; CI: 0.70 – 4.06).



**Figure 15.** Meta-analysis of the impact of conducting interviews on homicide case clearance

#### ***Convicted***

Crime scene visits by detectives were associated with almost five times the odds of homicide charges being laid (OR: 4.92; CI: 2.83 – 8.57). The effect of homicide crime scene visits by medical practitioners was not significant (OR: 0.48; CI: 0.14 – 1.68).



**Figure 16.** Meta-analysis of the impact of conducting interviews on homicide case clearance

**Detective present at post-mortem**

One study (Schroeder & White, 2009) examined the impact on homicide case clearance of having a detective attend a post-mortem exam, and found a positive association.

***Case cleared***

Detective attendance at post-mortems was associated with a 75% increase in the odds of a homicide case being cleared (OR: 1.75; CI: 1.03 – 2.98).

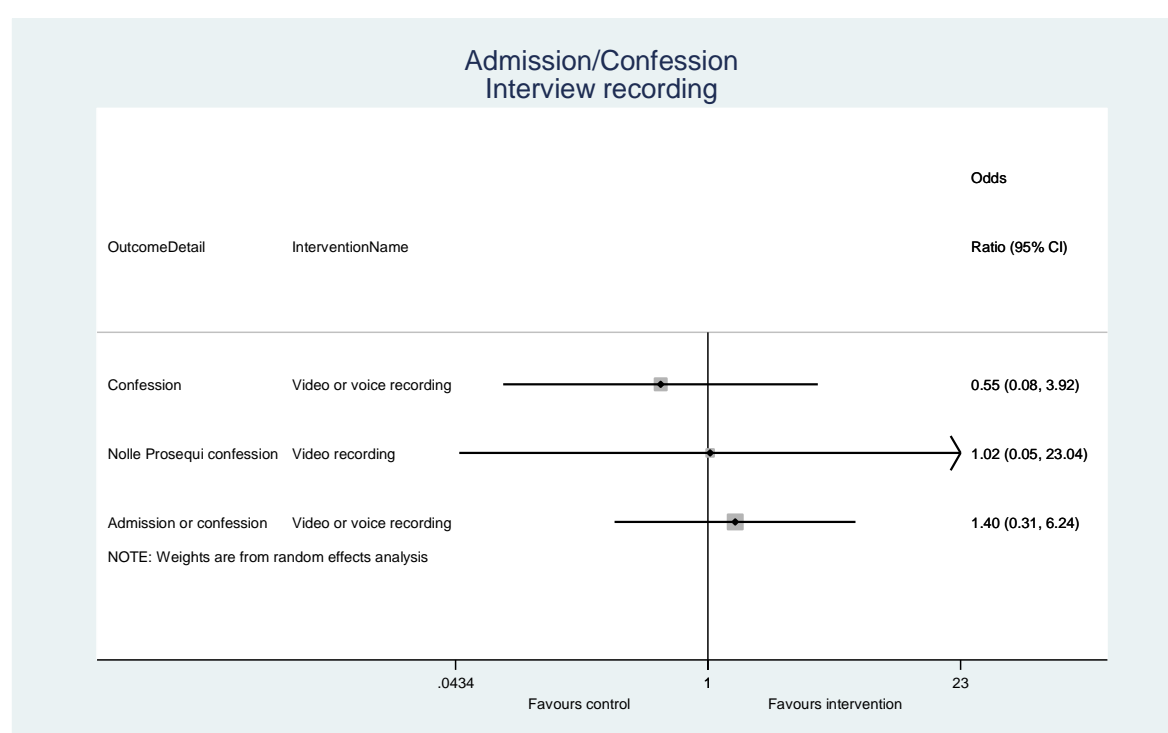


## **Interview recording**

One study (Knight, 2009) examined the effect of video and voice recording of investigative interviews on serious violent crime outcomes. Interview recordings were not significantly associated with any of the following outcomes: admission, confession, prosecution, dismissal, guilty pleas, plea bargains, hung juries, or conviction.

## ***Admissions or confessions***

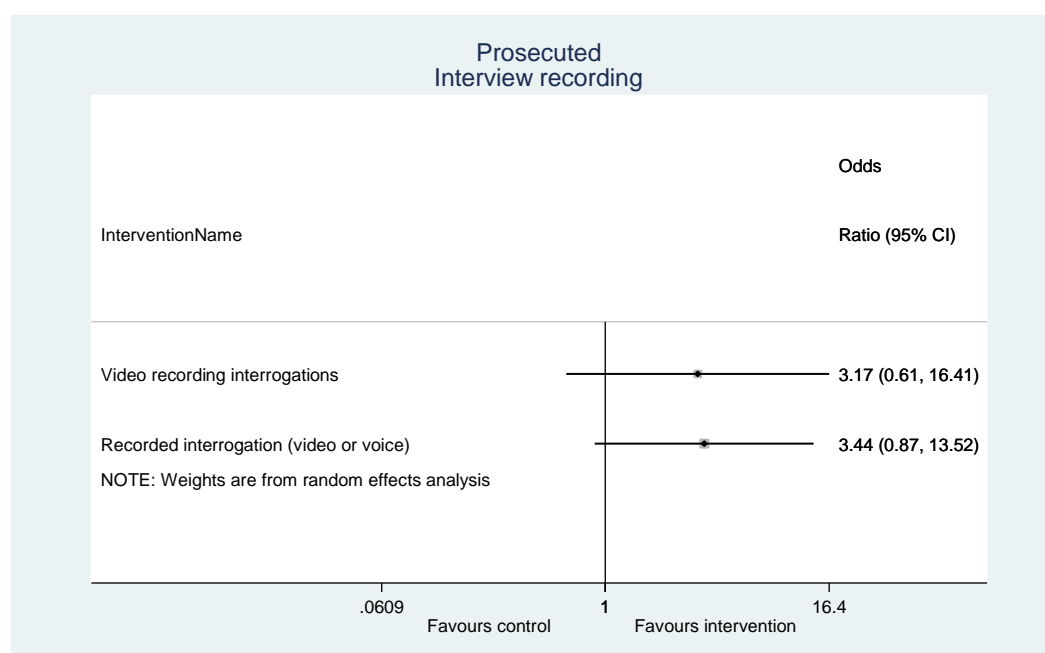
Knight (2009) examined three variations on the relationship between recorded interviews and confession or admission, none of which were individually significant. As the measures contained significant overlap from the same sample, we do not conduct a meta-analysis on these effects. Figure 17 shows that recorded interrogation (video or voice) was not significantly associated with confession (OR: 0.55; CI: 0.08 – 3.92), or with a combined measure of admission or confession (OR: 1.40; CI: 0.31 – 6.24), and video recorded interrogations were not significantly associated with nolle prosequi confessions (OR: 1.02; CI: 0.05 – 23.04).



**Figure 17.** Meta-analysis of the impact of interview recording on admissions or confessions in serious violent crime cases

## ***Prosecution***

Two highly correlated measures of recorded interrogation were examined for their impact on prosecution. Figure 18 shows that neither video recorded interrogation (OR: 3.17; CI: 0.61 – 16.41), nor a measure combining video or voice recording (OR: 3.44; CI: 0.87 – 13.52) were significantly associated with prosecution of serious violent crime cases. Due to the significant overlap of the intervention measures on the same sample, we do not present a meta-analysis of these effect sizes.



**Figure 18.** Meta-analysis of the impact of interview recording on prosecution in serious violent crime cases

### ***Dismissed***

One study (Knight, 2009) showed no significant effect of video recorded interrogations on the dismissal of serious violent crime cases (OR: 0.30; CI: 0.04 – 2.14).

### ***Guilty plea***

One study (Knight, 2009) showed no significant effect of video recorded interrogations on the guilty pleas in serious violent crime cases (OR: 2.78; CI: 0.52 – 14.80).

### ***Plea bargain***

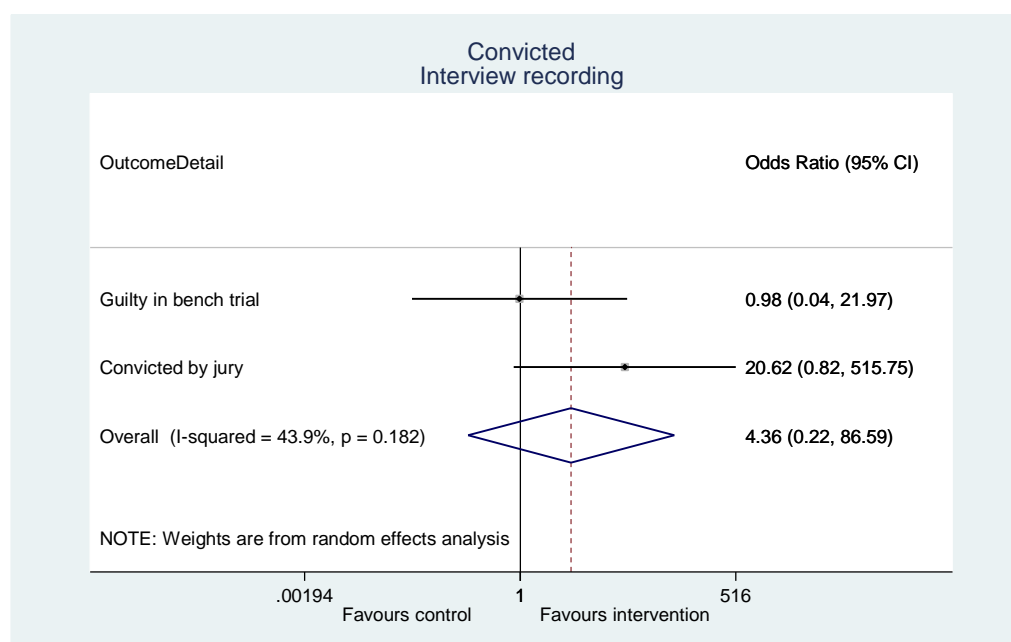
One study (Knight, 2009) showed no significant effect of video recorded interrogations on the guilty pleas in serious violent crime cases (OR: 0.26; CI: 0.04 – 1.82).

### ***Hung jury***

One study (Knight, 2009) showed no significant effect of video recorded interrogations on the guilty pleas in serious violent crime cases (OR: 1.02; CI: 0.05 – 23.04).

### ***Conviction***

Two effect sizes were identified for the impact of video recorded interrogations on conviction in serious violent crime cases. As figure 19 shows, the overall effect on conviction was not significant (OR: 4.36; CI: 0.22 – 86.59). Video recording of interviews had no significant impact on the odds of being found guilty at a bench trial (OR: 0.98; CI: 0.04 – 21.97) or being convicted by a jury (OR: 20.62; CI: 0.82 – 515.75).



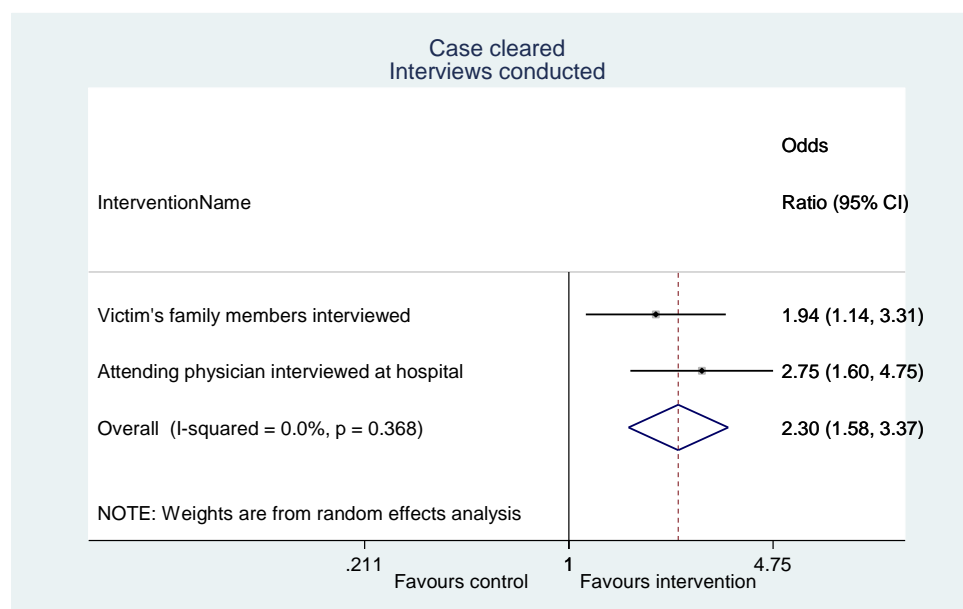
**Figure 19.** Meta-analysis of the impact of interview recording on conviction in serious violent crime cases

### **Interviews conducted**

Two studies examined the impact of conducting interviews on case outcomes. Schroeder & White (2009) demonstrated that interviewing family members or attending physicians more than doubled the odds of homicide case clearance. Effect sizes from Kelley (2008) showed that interviewing suspects in sexual assault cases was associated with: a borderline statistically significant reduction in the odds of police dropping or unfounding a case; four-fold increase in the odds of police presenting a case to prosecution; and a 65% reduction in the odds of victims withdrawing from a sexual assault case.

### ***Case cleared***

Schroeder & White (2009) contributed two effect sizes that measured the impact of interviewing victim's family members and the attending physicians in hospital on homicide case clearance. As figure 20 shows, both of these interventions are associated with significant increases in case clearance: interviewing family members is associated with nearly double the odds of case clearance (OR: 1.94; CI: 1.14 – 3.31), whilst interviews with the attending physician at hospital are associated with nearly a three-fold increase in the odds of case clearance (OR: 2.75; CI: 1.60 – 4.75). The overall effect on average is more than double the odds of case clearance (OR: 2.30; CI: 1.58 – 3.37).



**Figure 20.** Meta-analysis of the impact of conducting interviews on homicide case clearance

### ***Police drop or unfound case***

Keeley (2008) examined the impact of interviewing suspects on the police decision to drop or unfound a sexual assault case. The effect is bordering on a statistically significant halving of the odds of cases being dropped (OR: 0.51; CI: 0.26 – 1.00).

### ***Case presented to prosecution***

There was a significant association between interviewing suspects and the police decision to present a sexual assault case to the prosecution. One study from Keeley (2008) showed that cases where the suspect was interviewed had nearly four times the odds that the case would be presented to the prosecutors (OR: 3.97; CI: 2.36 – 6.70).

### ***Victim withdraws***

One effect size was calculated for the relationship between suspects being interviewed by police in sexual assault cases, and the victim withdrawing cooperation for the case. This study

demonstrated a significant negative association, whereby cases where the suspects were interviewed had a 65% reduction in the odds of the victim withdrawing from the case (OR: 0.35; CI: 0.21 – 0.58).

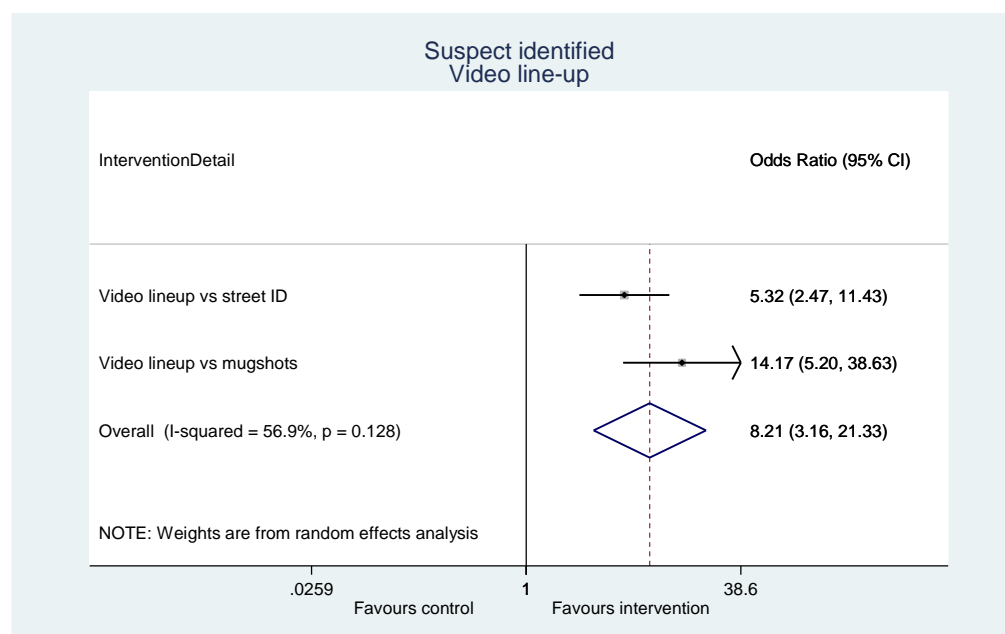
## Line-ups

Two studies examined the impact of police line-up techniques on suspect identification. Clarke and Tunnicliff (2001) compare two different line-up compositions for suspect identification in carjacking cases, whilst Davis et al. (2014) examine the impact of video line-ups, mugshots and street identifications using police data on robbery cases. Clarke and Tunnicliff (2001) demonstrate that a perpetrator-matched lineup (with foils matched to the perpetrator) achieves a lower false positive suspect identification than a suspect-matched line-up (where the foils were matched to an innocent suspect). Davis et al., (2014) showed that video line-ups were more effective than either street identification or mugshots, and that street identification was more effective than mugshot viewing. They further demonstrated that video line-ups were more successful where the witness had previously performed a street identification, and that there was no significant difference in suspect identification where the identification occurred more than a week after the offence, compared to identifications that happened less than a week after.

## Suspect identified

Clark and Tunnicliff (2001) performed a laboratory experiment examining the effectiveness of different forms of foil matching in line-ups for carjacking. The results demonstrate that in the absence of the actual perpetrator, the false positive identification rate is significantly lower when the foils in the line-up are selected to match the absent perpetrator, rather than when they are selected to match an innocent suspect (OR: 0.15; CI: 0.04 – 0.54).

Davis et al. (2014) compared suspect identification in robbery cases using video line-ups to two control conditions: street identification and mugshots. As figure 21 shows, the overall effect shows that video line-ups are a more effective method of suspect identification (OR: 8.21; CI: 3.16 – 21.33). Video line-ups showed more than five times the odds of identification than street identification (OR: 5.32; CI: 2.47 – 11.43) and over 14 times the odds of identification than mugshots (OR: 14.17; CI: 5.20 – 38.63).



**Figure 21.** Meta-analysis of the impact of video line-ups on suspect identification

Davis et al. (2014) also compared the effectiveness of street identification vs mugshot viewing in robbery cases, and found that street identification was more effective in identifying suspects (OR: 2.67; CI: 1.11 – 6.38).

Davis et al. (2014) found a significantly higher likelihood of a witness identifying the suspect at a second video identification, if the witness having previously identified a suspect in a street identification (OR: 4.65; CI: 1.88 – 11.50).

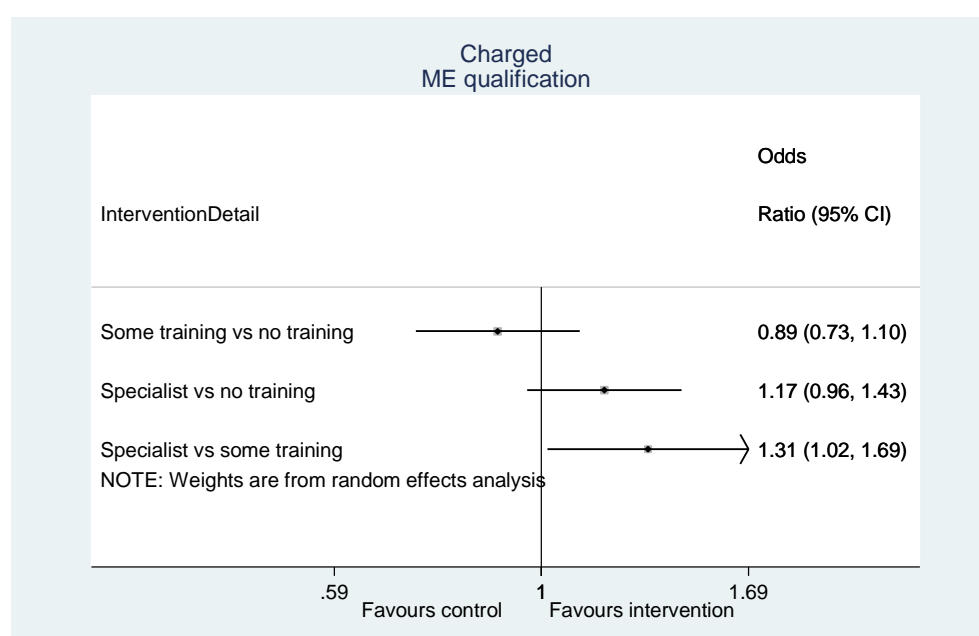
Finally, Davis et al. (2014) examined the impact of the timing of identification procedures, and showed that there was no significant difference in the likelihood of suspect identification where the procedure took place less than one week after the offence, compared to more than one week after (OR: 4.50; CI: 0.97 – 20.83).

### **Medical examiner qualifications**

One study (Abrahams et al, 2011) examined the impact of different levels of medical examiner qualification on homicide case outcomes in South Africa. They found that although specialist qualification (compared to 'some training') is associated with increased odds of charges being laid, this condition was conversely associated with a lower likelihood of conviction. Whilst having some training (vs no training) had no impact on charges, it was associated with significantly higher odds of conviction.

#### ***Charged***

One study (Abrahams et al., 2011) considered the impact of three forms of medical examiner qualification on charges laid in homicide cases. As figure 22 shows, there was a significant increase in the odds of charges laid if the medical examiner had specialist training, compared to no training (OR: 1.31; CI: 1.02 – 1.69). There was no significant difference in charges laid for specialists compared to no training (OR: 1.17; CI: 0.96 – 1.43), nor for some training vs no training (OR: 0.89; CI: 0.73 – 1.10).

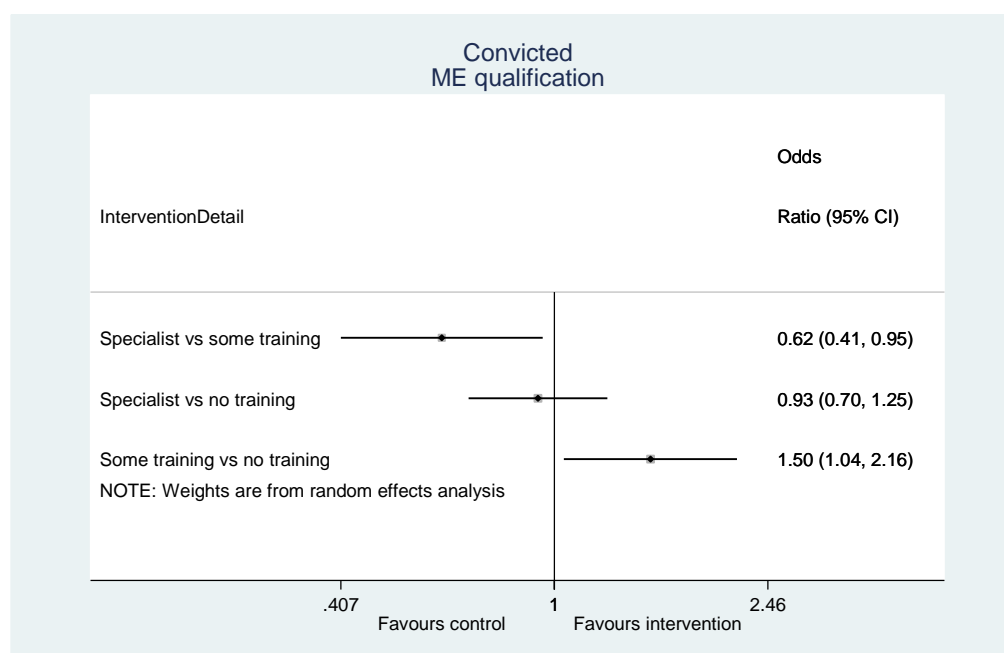


**Figure 22.** The impact of medical examiner qualification on homicide charges

#### ***Convicted***

Abrahams et al., 2011 examine the impact of three forms of medical examiner qualification on conviction in homicide cases. As figure 23 shows, there was a significant increase in the odds of charges laid if the medical examiner had some training, compared to no training (OR: 1.50; CI: 1.04 – 2.16). There was no significant difference in charges laid for specialists compared to no training (OR: 0.93; CI: 0.70 – 1.25). For cases where the medical practitioner was a specialist there was a significant decrease in the odds of conviction, compared to cases where the medical practitioner had no training (OR: 0.62; CI: 0.41 – 0.95).





**Figure 23.** The impact of medical examiner qualification on homicide convictions

## **Specialised sexual offence interventions**

Eight studies examine the impact of specialised sexual offence interventions, including: sexual assault screening (Alderden, 2008; Alderden & Ullman, 2012; Bouffard, 2000; Heenan & Murray, 2007; Kelly, 2008); the Sexual Assault Nurse Examiner program (Kelly, 2008; Toon & Gurusamy, 2014 – data from Kelly, 2004 & Campbell, 2012); and specialist police sex offence units (LaFree, 1981).

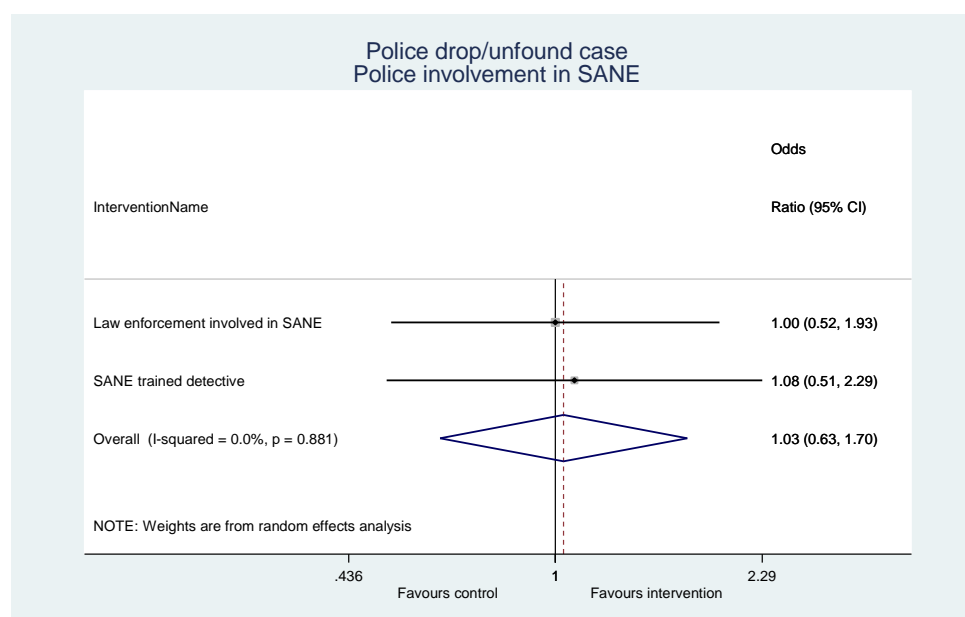
Kelley (2008) examined the impact of police involvement in the SANE program or on the use of SANE trained detectives. There was no significant impact on the police decision to drop or unfound a case, police decision to present a case for prosecution, or victim withdrawal.

The effects from studies that examined the impact of sexual assault examinations on case outcomes were highly heterogeneous across, and at times within, outcomes. Sexual assault screening exams were not significantly associated with the police decision to drop or unfound a sexual assault case, or with case clearance or closure. Sexual assault screening exams did significantly increase the odds of arrest and charges being laid, and had a marginally significant increase in the likelihood of cases being presented to prosecution, but no significant impact on prosecution, conviction, or exceptional closure. Finally, whilst overall there was no significant effect on victims withdrawing from sexual assault case, there is evidence to suggest that standard forensic examinations produce a higher rate of victim withdrawal than that seen in SANE exams.

One study (LaFree, 1981) found that specialist sex offence units had no significant impact on arrests, or whether felony charges were laid in sexual assault cases.

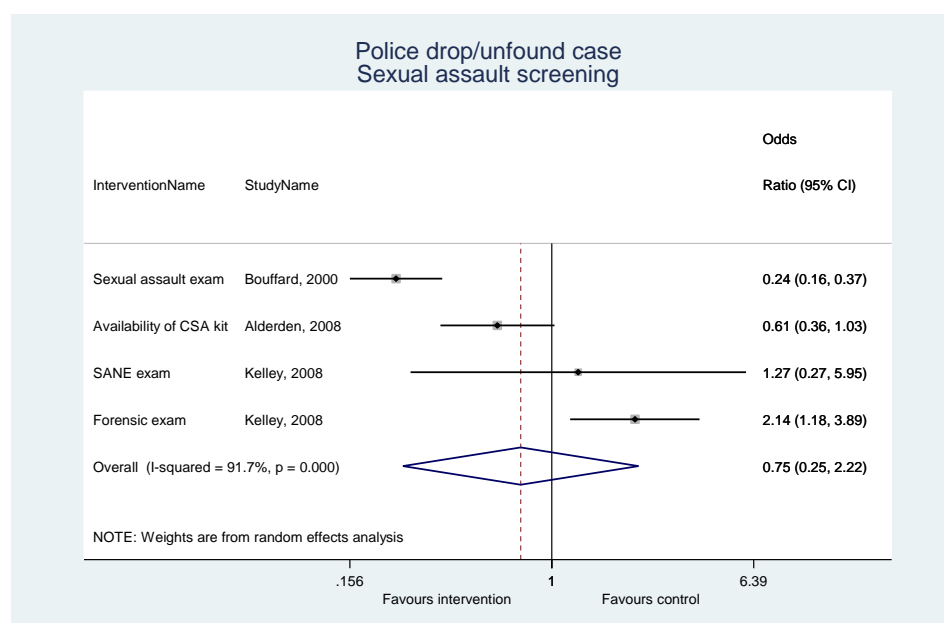
### ***Police drop or unfound case***

One study (Kelley, 2008) examined two measures of police involvement in the SANE program and their effect on police decisions to drop or unfound a sexual assault case. As figure 24 shows, there was no significant effect of SANE trained (OR: 1.08; CI: 0.51 – 2.29), or of police involvement in the SANE program (OR: 1.00; CI: 0.52 – 1.93) on the police decision to drop or unfound a sexual assault case. Overall, there was no significant impact of either of these measures (OR: 1.03; CI: 0.63 – 1.70).



**Figure 24.** Meta-analysis of the impact of police involvement in the SANE program on police decisions to drop or unfound a case

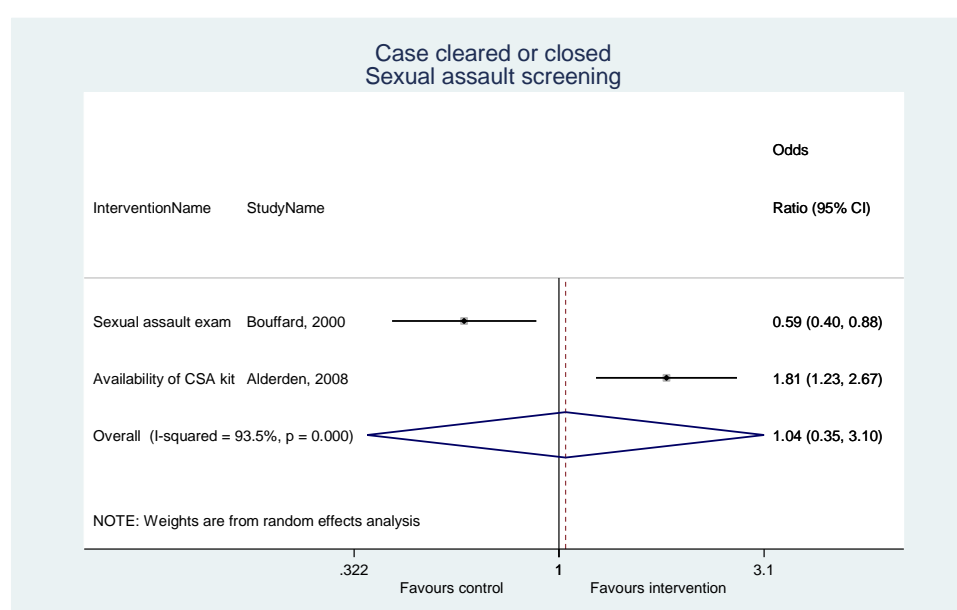
Three studies (Alderden, 2008; Bouffard, 2000; Kelley, 2008) examined the impact of sexual assault screening exams on the police decision to drop or unfound a case. As figure 25 shows, the overall impact was not significant (OR: 0.75; CI: 0.25 – 2.22), although the individual effect sizes were highly heterogeneous ( $I^2$ : 91.7%,  $p < 0.001$ ).



**Figure 25.** Meta-analysis of the impact of sexual assault screening on police decisions to drop or unfound a case

### ***Case cleared or closed***

Two studies examined the impact of sexual assault screening exams on case clearance or closure. As seen in figure 26, Bouffard (2000) showed a significant decrease in the closure of sexual assault when a sexual assault exam was conducted (OR: 0.59; CI: 0.40 – 0.88), whilst Alderden (2008) showed a significant increase in sexual assault case clearance when a criminal sexual assault kit was available (OR: 1.81; CI: 1.23 – 2.67). Overall, there was no significant impact on case clearance or closure by sexual assault screening (OR: 1.04; CI: 0.35 – 3.10).

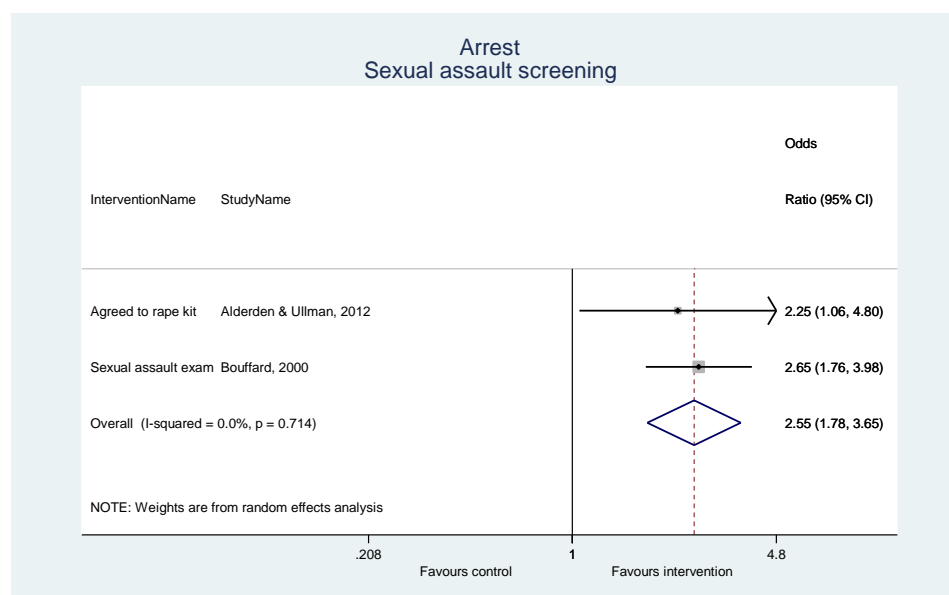


**Figure 26.** Meta-analysis of the impact of sexual assault screening on case clearance or closure

### Arrest

One study (LaFree, 1981) showed no significant effect of a specialist sex offence unit on arrests in sexual assault cases (OR: 1.00; CI: 0.75 – 1.32).

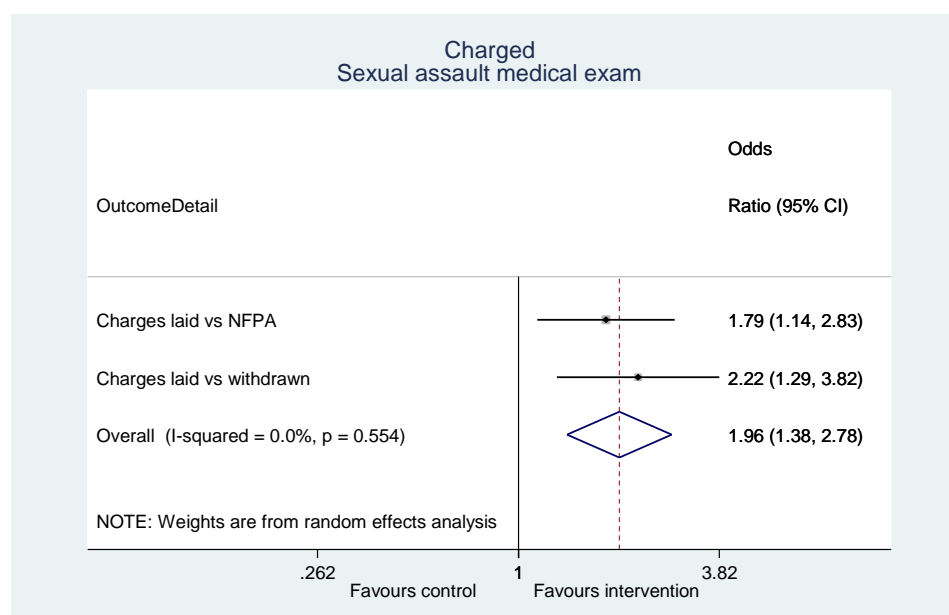
Two studies examined the impact of sexual assault examinations on arrest (Alderden & Ullman, 2012; Bouffard, 2000). As figure 27 shows, on average these exams are associated with more than double the odds of an arrest in a sexual assault case (OR: 2.55; CI: 1.78 – 3.65).



**Figure 27.** Meta-analysis of the impact of sexual assault screening on arrests

### Charged

One study contributed two effect sizes to examine the impact of sexual assault medical examinations on whether charges were laid (Heenan & Murray, 2007). As figure 28 shows, on average these exams are associated with nearly than double the odds of charges being laid in a sexual assault case (OR: 1.96; CI: 1.38 – 2.78).



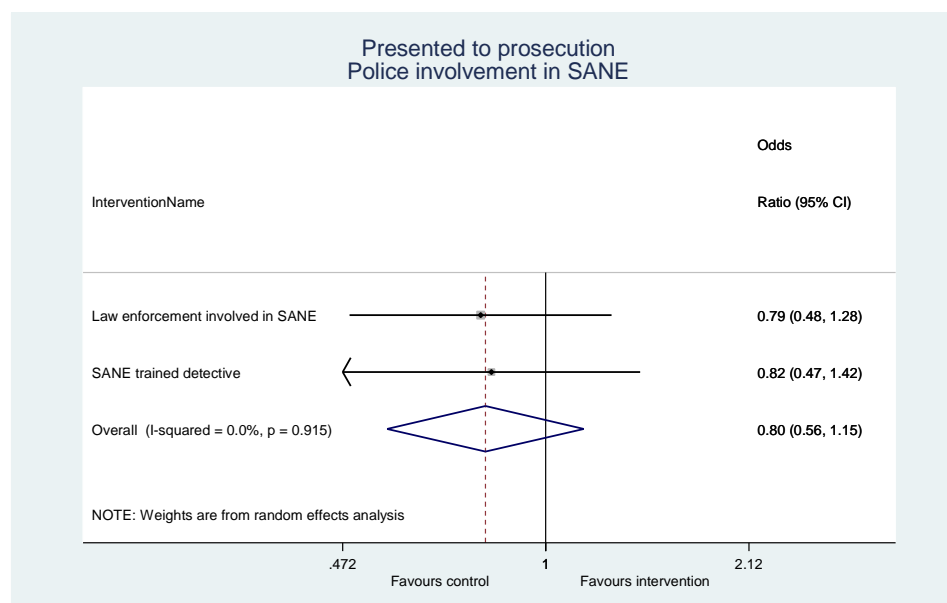
**Figure 28.** Meta-analysis of the impact of medical examination on sexual assault charges

### ***Felony charge***

One study (LaFree, 1981) showed no significant effect of a specialist sex offence unit on the laying of felony charges in sexual assault cases (OR: 1.39; CI: 0.88 – 2.19).

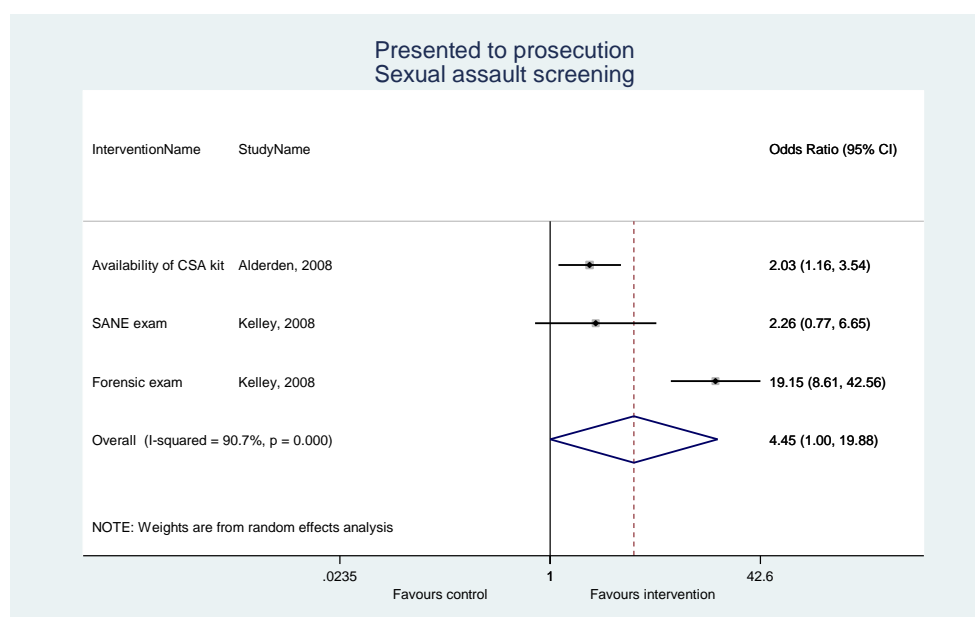
### ***Presented to prosecution***

One study (Kelley, 2008) examined two measures of police involvement in the SANE program and their effect on police decisions to present a sexual assault case for prosecution. As figure 29 shows, there was no significant effect of SANE trained detectives (OR: 0.82; CI: 0.47 – 1.42), or of police involvement in the SANE program (OR: 0.79; CI: 0.48 – 1.28) on the police decision to drop or unfound a sexual assault case. Overall, there was no significant impact of either of these measures (OR: 0.80; CI: 0.56 – 1.15).



**Figure 29.** Meta-analysis of the impact of police involvement in the SANE program on the decision to present a sexual assault case for prosecution

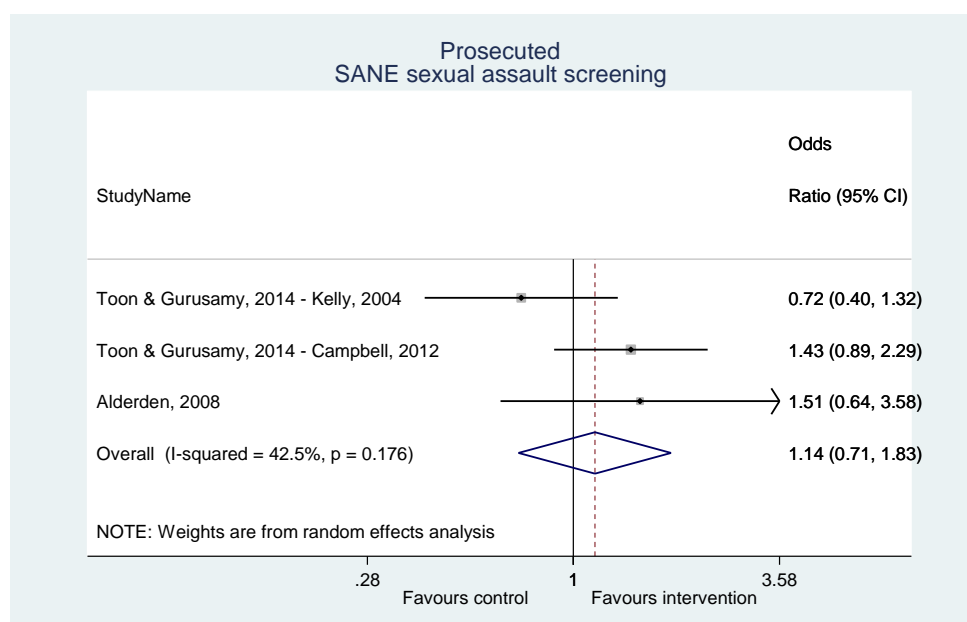
Two studies (Alderden, 2008; Kelly, 2008) examined the impact of SANE and non-SANE forensic sexual assault exams on the likelihood of a sexual assault case being presented to prosecution. As seen in figure 30, sexual assault cases are significantly more likely to be presented to prosecution if there was a criminal sexual assault kit available (OR: 2.03; CI: 1.16 – 3.54) or a forensic examination (OR: 19.15; CI: 8.61– 42.56), whereas a SANE exam has no significant impact on presentation to prosecution (OR: 2.26; CI: 0.77 – 6.65). On average, these effects cancel one another and sexual assault screening has a marginally significant positive effect on the odds of presenting a case to prosecution (OR: 4.45; CI: 0.11 : 1.00 – 19.88), but this is a highly heterogenous set of effects.



**Figure 30.** Meta-analysis of the impact of sexual assault screening on police presenting a case to prosecution

### **Prosecuted**

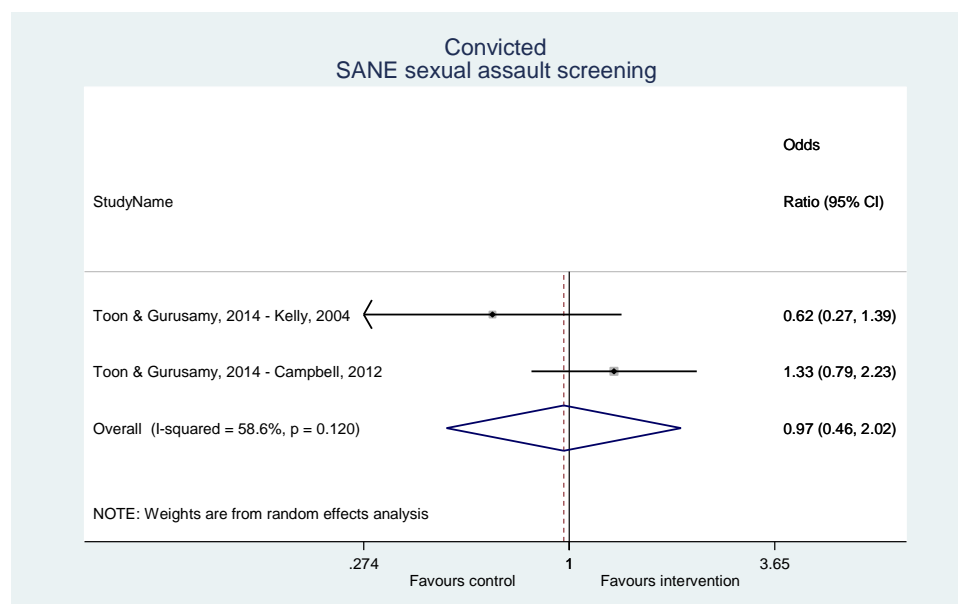
Three studies contributed effect sizes to examine the impact of SANE sexual assault screening on prosecution of sexual assault cases (Alderden, 2008; Toon & Gurumasy, 2014 – data from Kelly, 2014 & Campbell, 2012). As figure 31 shows, none of the component effect sizes showed a statistically significant impact on prosecution, and the overall impact is also not statistically significant (OR: 1.14; CI: 0.71 – 1.83).



**Figure 31.** Meta-analysis of the impact of Sexual Assault Nurse Examiner sexual assault screening on prosecution

### Convicted

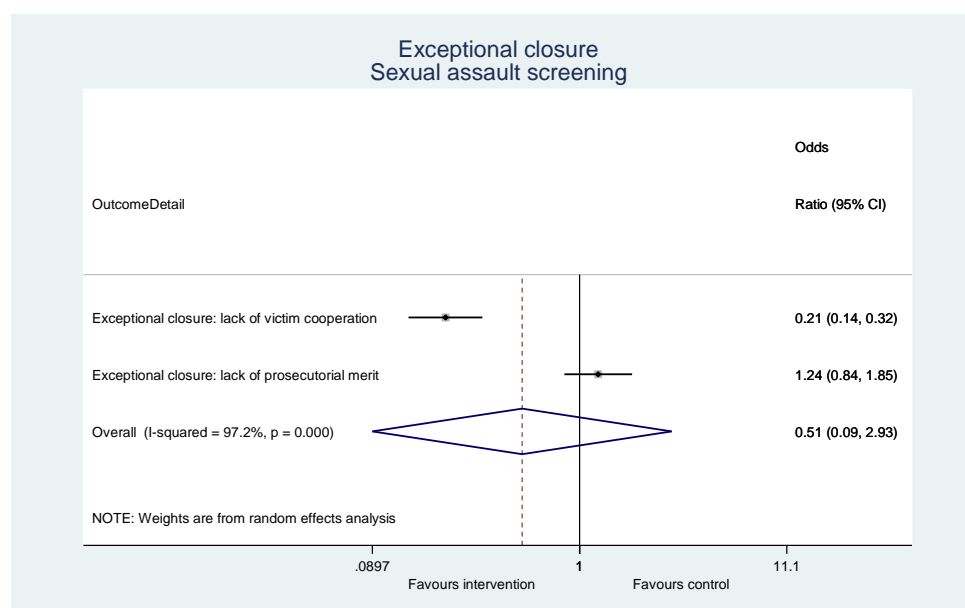
Two studies contributed effect sizes to examine the impact of SANE sexual assault screening on conviction in sexual assault cases (Toon & Gurumasy, 2014 – data from Kelly, 2014 & Campbell, 2012). As figure 32 shows, none of the component effect sizes showed a statistically significant impact on prosecution, and the overall impact is also not statistically significant (OR: 0.97; CI: 0.46 – 2.02).



**Figure 32.** Meta-analysis of the impact of Sexual Assault Nurse Examiner sexual assault screening on conviction

### Exceptional closure

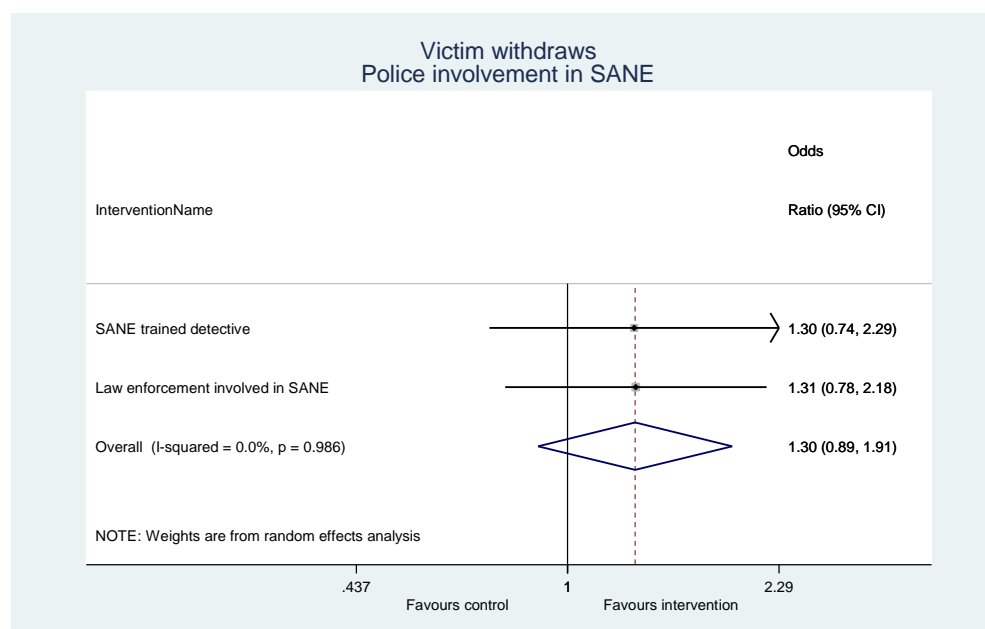
One study (Bouffard, 2000) contributed two effect sizes that examined the impact of sexual assault examination on exceptional closure of cases. As figure 33 shows, sexual assault exams were associated with an 80% reduction in the odds of exceptional closure due to lack of victim cooperation (OR: 0.21; CI: 0.14 – 0.32), but had no significant impact on exceptional closure due to lack of prosecutorial merit (OR: 1.24; CI: 0.84 – 1.85). Overall, there was no significant impact on exceptional closure (OR: 0.51; CI: 0.09 – 2.93) but these outcomes can be considered highly heterogeneous.



**Figure 33.** Meta-analysis of the impact of sexual assault exams on exceptional closure of cases

### **Victim withdraws**

One study (Kelley, 2008) examined two measures of police involvement in the SANE program and their effect on the likelihood of victim withdrawal from the case. As figure 34 shows, there was no significant effect of SANE trained detectives (OR: 1.30; CI: 0.74 – 2.29), or of police involvement in the SANE program (OR: 1.31; CI: 0.78 – 2.18) on victim withdrawal from sexual assault cases. Overall, there was no significant impact of either of these measures (OR: 1.30; CI: 0.89 – 1.91).

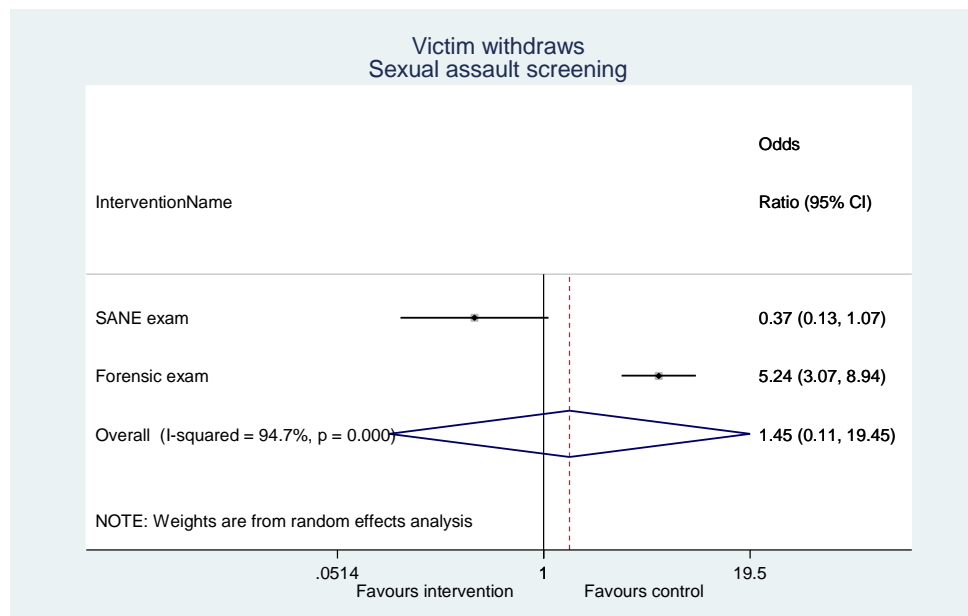


**Figure 34.** Meta-analysis of the impact of sexual assault screening on victim withdrawal from cases

Kelly (2008) also examines the impact of sexual assault exams – both SANE and non-SANE forensic exams. As seen in figure 35, sexual assault victims are significantly more likely to withdraw from the case if they have had a forensic examination (OR: 5.24; CI: 3.07 – 8.94), whereas a SANE exam has no significant impact on victim withdrawal (OR: 0.37; CI: 0.13 – 1.07).



On average, these effects cancel one another out to show that sexual assault screening has no overall effect on victim withdrawal (OR: 1.45; CI: 0.11 – 19.45); however, this is a highly heterogenous set of effects.



**Figure 35.** Meta-analysis of the impact of sexual assault screening on victim withdrawal from cases

## Summary of findings

This systematic review evaluated 13 types of interventions, grouped into 10 main categories, and examined their impact on one or more of 17 outcome types. We briefly summarise the findings below.

**Collection or testing of DNA** was evaluated in five studies that looked at the impact on case outcomes in homicide, sexual assault, robbery and serious assault. Overall, collecting or testing DNA was associated with:

- increased conviction and sentence length,
- no significant association with charges, prosecution, or plea bargains, and
- decreased case clearance.

**Collection or testing of physical evidence** was evaluated in three studies that looked at the impact on case outcomes in homicide, robbery, and sexual assault cases. Eleven different types of evidence were assessed. Overall, the findings showed:

- crime scene technicians were associated with increased clearance and arrest in robbery,
- taking fingerprints was associated with increased arrest in robbery,
- collecting toxicology specimens was associated with decreased charge and conviction,
- collecting genital swabs, nail scrapings, or head hair specimens was associated with decreased charge, but increased conviction,
- performing an autopsy at an academic centre was associated with decreased charge but had no significant impact on conviction
- performing a full autopsy had no significant impact on charge but was associated with decreased conviction,
- collecting histology or clothes specimens had no significant impact on either charge or conviction, and
- taking crime scene or forensic photos, or victim blood alcohol was associated with an increase in charge and conviction.

**Computer or file checks** were evaluated in two studies examining the impact on homicide and robbery cases. Results showed:

- running computer checks on the deceased, witnesses or suspects in homicide cases was associated with higher homicide case clearance, and
- running file checks on persons, vehicles or vehicle registrations had no significant association with arrest in robbery cases.

**Crime scene visits by detectives or medical practitioners** in homicide cases were evaluated in one study, which showed:

- detective visits to the homicide scene increased charges and conviction, and
- there was no significant association between having medical practitioners attend the homicide scene and the likelihood of charges or conviction.

**Detective presence at post-mortem** was associated with increased case clearance in one study of homicide outcomes.

**Interview recording** was evaluated by one study, which showed that in serious violent crime cases, video or voice recordings were not significantly associated with admission, confession, prosecution, dismissal, guilty pleas, plea bargains, hung juries, or conviction.

**Interviews conducted** with family members, attending physicians, or suspects were evaluated in two studies of homicide or sexual assault. The analyses found that:

- interviewing family members or attending physicians was associated with increased homicide case clearance, and
- interviewing suspects in sexual assault cases was associated with a borderline significant reduction in police dropping or unfounding a case, and increase in police presenting a case to prosecution; and a reduction in victims withdrawing from sexual assault cases.

**Line-ups** were evaluated in two studies that looked at suspect identification in carjacking and robbery cases. The results showed that:

- perpetrator-matched line-ups (with foils matched to the perpetrator) give less false positive suspect identifications than suspect-matched line-ups (where the foils were matched to an innocent suspect) in a lab experiment,
- video line-ups were more effective for suspect identification than street identification or mugshots, and street identification was more effective than mugshots,
- video line-ups were more successful if the witness had previously identified the suspect in a street line-up,
- there was no significant difference in suspect identification between line-ups that occur within a week of the offence and those that occur later.

**Medical examiner qualifications** were evaluated in one study of homicide, which found:

- specialist qualification (compared to 'some training') is associated with increased odds of charges being laid, but lower odds of conviction, and
- some training (vs no training) had no impact on charges, but was associated with significantly higher odds of conviction.

**Specialised sexual offence interventions** were evaluated in eight studies, looking at sexual assault screening, the Sexual Assault Nurse Examiner program, and specialist police sex offence units. The analyses found that:

- police involvement in the SANE program or the use of SANE trained detectives had no significant impact on the police decision to drop or unfound a case, police decision to present a case for prosecution, or victim withdrawal,
- sexual assault screening exams were not significantly associated with the police decision to drop or unfound a sexual assault case, or with case clearance or closure,
- sexual assault screening exams were associated with an increase in arrest and charges being laid, and a marginally significant increase in cases presented to prosecution,
- sexual assault screening exams showed no significant associations with prosecution, conviction, or exceptional closure,
- overall, sexual assault exams showed no significant effect on victims withdrawing from cases, but some evidence suggests that standard forensic exams have a higher rate of victim withdrawal than SANE exams, and
- specialist sex offence units had no significant impact on arrests, or felony charges.

## Discussion

---

In the introduction, we argued that the level of research synthesis seen for street-level policing approaches and general crime and disorder far outweighs the research synthesis for police investigative techniques, particularly in the area of serious violent crime. We also argued that that a systematic review on the effectiveness of police techniques for investigating serious violent crime was required so that researchers, practitioners and policy makers can determine the relative effectiveness of techniques police use to investigate serious violent crime. The results of this systematic review highlights the fact that there is also only a small body of primary research that empirically evaluates investigative techniques for serious violent crime in a manner that can be synthesised using meta-analytic techniques.

This systematic review identified 3,686 studies to be screened and located, examined the full text of 1,900 documents, yet yielded only 15 documents containing 18 eligible studies from which standardised effect sizes could be calculated. These studies each examined the impact of a police investigative technique on case outcomes in serious violent crime, including homicide, robbery, carjacking, serious assault, sexual assault, and an aggregate measure of serious violent crime. We synthesised the results of 13 intervention types, in 10 broad categories, on 17 case outcomes. Whilst the eligible studies produced 111 standardised effect sizes for synthesis, in many instances there were few studies examining the same issue for synthesis. Due to the small number of studies, there was insufficient power to perform moderator analyses by crime type to determine if certain interventions work best for certain crime types. We therefore caution that these results should be seen as a preliminary exploration of the effectiveness of investigative techniques for serious violent crime.

It is important to recognise that even within this small set of quantitative evaluations, that there remain issues of selection bias. Only one study used a randomised control experiment design, and only three studies controlled for victim, case or organisational characteristics. In the remaining 14 included studies the control and treatment conditions were matched only on crime type. As a result, it is possible that crime or victim characteristics may have led to the allocation of treatment, and also to the results seen. Thus it is important to recognise that in the majority of instances, there is the possibility of confounded effects and that these results can only speak to association, and not causation.

During the course of the search we identified a large amount of empirical research that evaluated investigative police techniques, but as we have shown, a much smaller corpus that evaluates them in the context of serious violent crime. We would encourage further research to explore the differential impact of techniques across crime type, and would particularly encourage randomised control experiments where appropriate and ethical, or well-balanced quasi-experiments that control for selection assignment factors.

## References

- Brame, R., Mulvey, E. P., & Piquero, A. R. (2001). On the development of different kinds of criminal activity. *Sociological Methods & Research*, 29, 319–341. doi: 10.1177/0049124101029003003
- Bullock, K., & Tilley, N. (2009). Evidence-based policing and crime reduction. *Policing*, 3(4), 381–387. doi: 10.1093/police/pap032
- Cole, J. E. (2007). *Factors influencing interprofessional collaboration on Sexual Assault Response Teams (SART)* (Doctoral Dissertation). Available from ProQuest Dissertations & Theses Global database. (UMI No. 3298816).
- Cronin, J. M., Murphy, G. R., Spahr, L. L., Toliver, J. I., & Weger, R. E. (2007). Promoting effective homicide investigations. Washington, DC: Police Executive Research Forum.
- Curry, P. A., Sen, A., & Orlov, G. (2013). *Crime, apprehension and clearance rates: Panel data evidence from Canadian provinces*. Retrieved from Social Science Research Network Working Paper Series website: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2336202](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2336202)
- Day, P., Breetzke, G., Kingham, S., & Campbell, M. (2012). Close proximity to alcohol outlets is associated with increased serious violent crime in New Zealand. *Australian and New Zealand journal of public health*, 36, 48–54. doi: 10.1111/j.1753-6405.2012.00827.x
- Denning, R., Bennett, S., Mazerolle, L., & Stocks, B. (2009). *Serious violent crime investigations: A systematic literature search and technical report*. Brisbane: Australian Research Council Centre of Excellence in Policing and Security.
- Eisner, M. (2003). Long-term historical trends in violent crime. *Crime and Justice*, 30, 83–142. doi: 10.2307/1147697
- Farrington, D. P. (2003). Methodological quality standards for evaluation research. *The ANNALS of the American Academy of Political and Social Science*, 587, 49–68. doi: 10.1177/0002716202250789
- Farrington, D. P., & Welsh, B. C. (2005). Randomised experiments in criminology: What have we learnt in the last two decades? *Journal of Experimental Criminology*, 1(1), 9–38. doi: 10.1007/s11292-004-6460-0
- Fuller, G. (2013). *Australian crime: Facts and figures 2012* (Research Report). Retrieved from [http://www.aic.gov.au/publications/current\\_series/facts/1-20/2012.html](http://www.aic.gov.au/publications/current_series/facts/1-20/2012.html)
- Glass, G. V. (1997). Interrupted time series quasi-experiments. In R. M. Jaeger (Ed.), *Complementary methods for research in education* (2nd ed., pp. 589–608). Washington, DC: American Educational Research Association.
- Higginson, A., & Neville, R. (2014). *SysReview* [Systematic Review Management Software]. Brisbane, Australia: The University of Queensland.
- Higginson, A., Eggins, E., Mazerolle, L., & Stanko, E. (2015). *The Global Policing Database* [Database and Protocol]. Retrieved from <http://www.gpd.uq.edu.au>
- Higginson, A., Mazerolle, L., Davis, J., Bedford, L., & Mengersen, K. (2013). Systematic review protocol: Community-oriented policing's impact on interpersonal violent crime in developing countries. *The Campbell Collaboration Library of Systematic Reviews*. <http://campbellcollaboration.org/lib/project/228/>
- Horvath, F., Meesig, R.T., & Lee, Y.H. (2001). *A national survey of police policies and practices regarding the criminal investigation process: Twenty-five years after Rand* (Final report to National Institute of Justice). Retrieved from

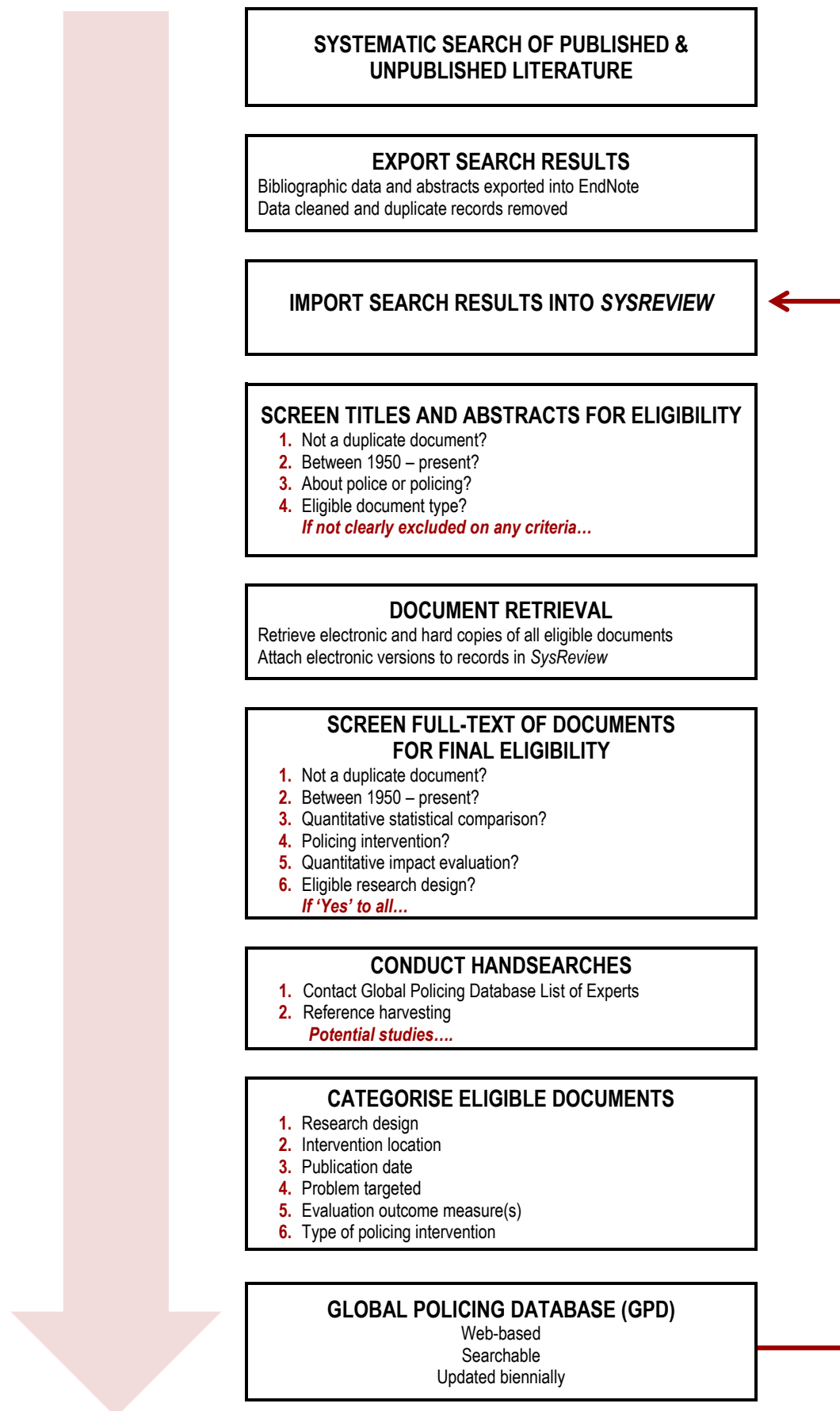
- <https://www.ncjrs.gov/pdffiles1/nij/grants/202902.pdf>
- Hoover, L., Zhang, Y., & Zhao, J. (2010). Protocol for a systematic review: Geographic information systems and their effects on police efficacy. *The Campbell Collaboration Library of Systematic Reviews*. Retrieved from <http://www.campbellcollaboration.org/lib/project/146/>
- Kramer, J. H., & Ulmer, J. T. (2002). Downward departures for serious violent offenders: Local court "corrections" to Pennsylvania's sentencing guidelines. *Criminology*, 40, 897–932. doi: 10.1111/j.1745-9125.2002.tb00977.x
- Litwin, K. J., & Xu, Y. (2007) Homicide clearances: A multi-level comparison of three time periods. *Homicide Studies*, 11(2), 94–114.
- Lum, C., Koper, C. S., & Telep, C. W. (2011). The evidence-based policing matrix. *Journal of Experimental Criminology*, 7, 7–26. doi: 10.1007/s11292-010-9108-2
- Mayhew, P. (2003). Counting the costs of crime in Australia. *Trends and Issues in Crime and Criminal Justice* No. 247. Retrieved from <http://aic.gov.au/publications/current%20series/tandi/241-260/tandi247.html>
- Mazerolle, L., & Bennett, S. (2011). *Experimental Criminology*. Oxford Bibliographies Online, Criminology Module. Retrieved from <http://www.oxfordbibliographies.com/view/document/obo-9780195396607/obo-9780195396607-0085.xml>
- Meares, D. P., & Barnes, J. C. (2010). Towards a systematic foundation for identifying evidence-based criminal justice sanctions and their relative effectiveness. *Journal of Criminal Justice*, 38, 702–710. doi: 10.1016/j.jcrimjus.2010.04.044
- Meissner, C., Redlich, A., Bhatt, S., & Brandon, S. (2012). Interview and interrogation methods and their effects on investigative outcomes. *The Campbell Collaboration Library of Systematic Reviews*. <http://campbellcollaboration.org/lib/project/147/>
- Moher, D., Liberati, A., Altman, D. G., & The PRISMA Group. (2009). Preferred items for systematic reviews and meta-analysis: The Prisma Statement. *PLoS Med*, 6(7): e1000097. doi:10.1371/journal.pmed1000097
- Morgan, A., & Homel, P. (2013). Evaluating crime prevention: Lessons from large-scale community crime prevention programs. *Trends and Issues in Crime and Criminal Justice*, No. 458. Retrieved from <http://www.aic.gov.au/publications/current%20series/tandi/441-460/tandi458.html>
- Newburn, T. (2007). Understanding investigation. In T. Newburn, T. Williamson & A. Wright (Eds.), *Handbook of criminal investigation* (pp. 1–13). Devon, UK: Willan Publishing.
- Palmiotto, M. J. (2004). *Criminal investigation* (3<sup>rd</sup> ed.). Lanham, MA: University Press of America.
- Petrosino, A., Boruch, R. F., Soydan, H., Duggan, L., & Sanchez-Meca, J. (2001). Meeting the challenges of evidence-based policy: The Campbell Collaboration. *The ANNALS of the American Academy of Political and Social Science*, 578, 14–34. doi: 10.1177/000271620157800102
- Puckett, J. L., & Lundman, R. J. (2003). Factors affecting homicide clearances: Multivariate analysis of a more complete conceptual framework. *Journal of Research in Crime and Delinquency*, 40(2), 171–193.
- Riedel, M. (2008). Homicide arrest clearances: A review of the literature. *Sociology Compass*, 2, 1145–1164.
- Riedel, M., & Jarvis, J. (1998). The decline of arrest clearances for criminal homicide: Causes,

- correlates, and third parties. *Criminal Justice Policy Review*, 9, 279–306. doi: 10.1177/1088767900004002002
- Regoeczi, W.C., Kennedy, L.W., & Silverman, R.A. (2000). Uncleared homicides: A Canada/United States comparison. *Homicide Studies*, 4(2), 135–161.
- Roberts, P. (2007). Law and criminal investigation. In T. Newburn, T. Williamson & A. Wright (Eds.), *Handbook of criminal investigation* (pp. 92–145). Devon, UK: Willan Publishing.
- Rollings, K. (2008). *Counting the costs of crime in Australia: A 2005 update* (Research and Public Policy Series No. 91). Canberra: Australian Institute of Criminology. Retrieved from <http://aic.gov.au/documents/9/A/3/%7B9A333836-6275-4855-9C0B-20FB05B05992%7Drpp91.pdf>
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston, MA: Houghton Mifflin.
- Sherman L. W., Farrington D. P., Welsh B. C., & MacKenzie D. L. (2006). *Evidence-based crime prevention* (2<sup>nd</sup> Ed.). London: Routledge.
- StatCorp. (2013). *Stata statistical software: Release 13*. College Station, TX: StataCorp LP.
- Stelfox, P. (2013). *Criminal investigation: An introduction to principles and practice* (2<sup>nd</sup> ed.). New York: Routledge.
- Sutton, A., & Cherney, A. (2007). Crime prevention in Australia: Beyond ‘what works?’. *Australian and New Zealand Journal of Criminology*, 40, 65–81. doi: 10.1375/acri.40.1.65
- Telep, C., & Weisburd, D. (in press). What has been learned from systematic reviews in policing? In D. Farrington & D. Weisburd (Eds.), *Systematic reviews in criminology: What have we learned?* New York: Springer Verlaag.
- Truman, J., Langton, L., & Planty, M. (2013). *Criminal victimization, 2012* (Document No. NCJ 243389). Retrieved from <http://www.bjs.gov/content/pub/pdf/cv12.pdf>
- Turner, R., & Kosa, R. (2003). *Cold case squads: Leaving no stone unturned* (Bureau of Justice Assistance Bulletin, Document No. NCJ 199781). Retrieved from <https://www.ncjrs.gov/html/bja/coldcasesquads/199781.pdf>
- Ulmer, J. T., & Bradley, M. S. (2006). Variation in trial penalties among serious violent offenses. *Criminology*, 44, 631–670. doi: 10.1111/j.17459125.2006.00059.x
- United Nations Office on Drugs and Crime. (2006). *Policing: Crime investigation*. Retrieved from [http://www.unodc.org/documents/justice-and-prison-reform/cjat\\_eng/3\\_Crime\\_Investigation.pdf](http://www.unodc.org/documents/justice-and-prison-reform/cjat_eng/3_Crime_Investigation.pdf)
- Valentine, J. C., & Thompson, S. G. (2013). Issues relating to confounding and meta-analysis when including non-randomized studies in systematic reviews on the effects of interventions. *Research Synthesis Methods*, 4(1), 26–35.
- Wallace, M., Turner, J., Matarazzo, A., & Babyak, C. (2009). *Measuring crime in Canada: Introducing the Crime Severity Index and improvements to the Uniform Crime Reporting Survey*. Ottawa: Statistics Canada, Canadian Centre for Justice Statistics.
- Weisburd, D., Ttofi, M., Telep, C., & Farrington, D. (2013). Title registration for a systematic review: The effects of increased police patrol on crime and disorder. *The Campbell Collaboration Library of Systematic Reviews*. Retrieved from <http://www.campbellcollaboration.org/lib/project/275/>
- Welner, M. (2013). Classifying crimes by severity from aggravators to depravity. In J. Douglas, A. W. Burgess, A. G. Burgess & R. K. Ressler (Eds.), *Crime classification manual: A standard system for investigating and classifying violent crime* (3<sup>rd</sup> ed., pp. 91–107). Hoboken, NJ: John Wiley & Sons.

- Welsh, B. C., & Farrington, D. P. (2006). *Preventing crime: What works for children, offenders, victims and places*. New York: Springer.
- Wilson, D., & Lipsey, M. (2001). The role of method in treatment effectiveness research: Evidence from meta-analysis. *Psychological Methods*, 6, 413-429.
- Wilson, D., Weisburd, D., & McClure, D. (2011). Use of DNA testing in police investigative work for increasing offender identification, arrest, conviction, and case clearance: A systematic review. *The Campbell Collaboration Library of Systematic Reviews*.  
<http://campbellcollaboration.org/lib/project/126/>

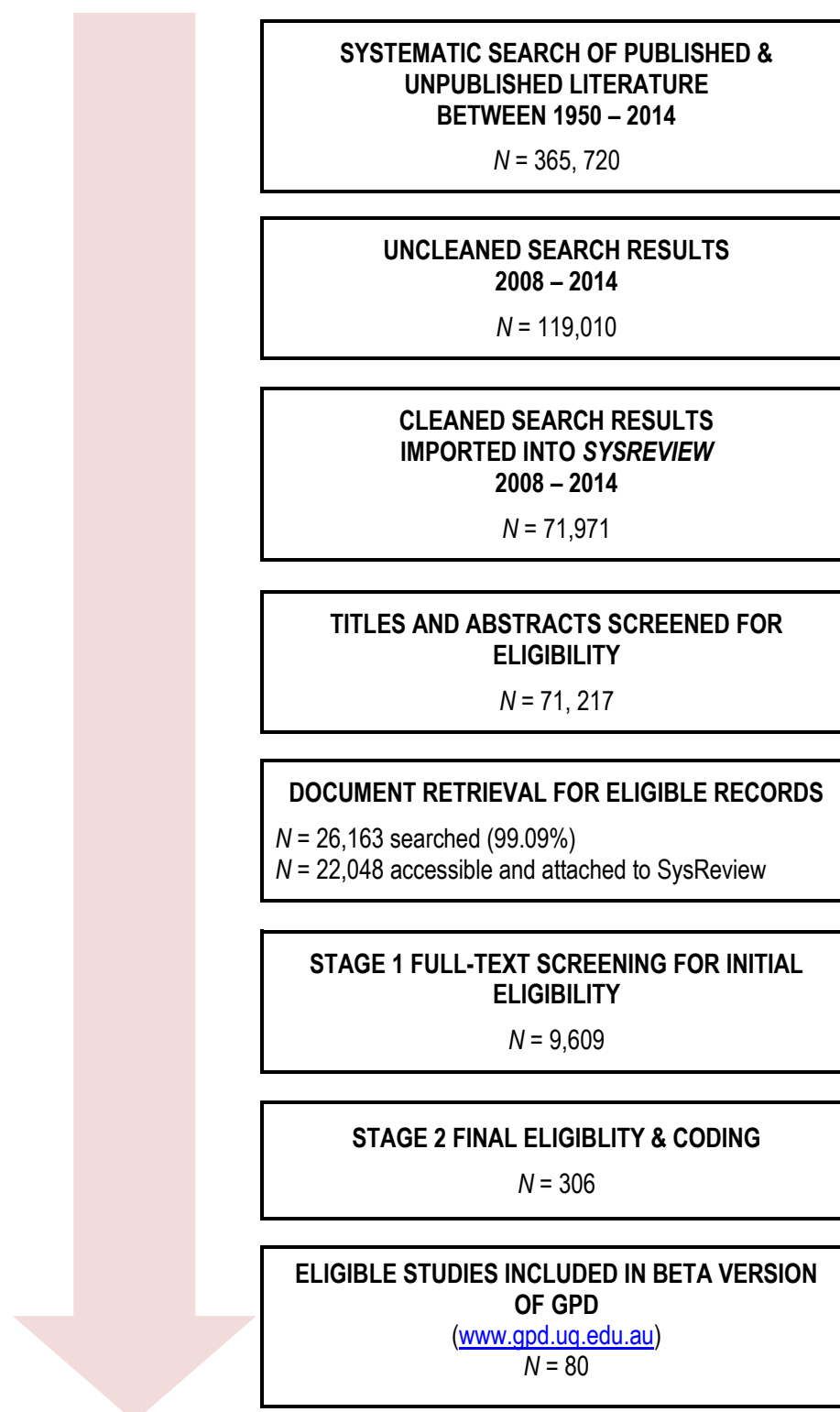


## Appendix A1: Global Policing Database Compilation Overview



## Appendix A2: Global Policing Database Compilation Progress

The Beta Version of the Global Policing Database (GPD) was launched at the Mayor's office for Policing and Crime (MOPAC) in June 2015 and contains a sample of eligible studies from 2014. Figure A2.1 outlines the status of the database as of June 2015. (see <https://www.london.gov.uk/media/mayor-press-releases/2015/07/new-database-brings-together-65-years-of-policing-research-from>)



## Appendix B1: NPIA Systematic Search and Screening Process

Denning et al. (2009) conducted a staged search strategy using the search terms list in Table B1.1 across the search locations listed in Table B1.2:

1. Tier 1 AND Tier 2 AND Tier 3
2. Tier 1 AND Tier 2 AND Tier 4

**Table B1.1 Denning et al.'s (2009) search strategy (1970 – beginning 2009)**

<b>TIER 1: Research Terms</b> <u>Search Field:</u> Abstract	Research OR empirical OR evaluation OR study
<b>TIER 2: Police Terms</b> <u>Search Field:</u> Abstract	Policing OR law enforcement
<b>TIER 3: Investigation Terms</b> <u>Search Field:</u> Abstract	Investigation OR Investigative OR detection OR interview
<b>TIER 4: Specific Investigation Terms</b> <u>Search Field:</u> All Fields	Solvability OR first response OR initial response OR call handling OR initial contact OR crime screening OR scene OR composites OR intelligence OR informant OR surveillance OR evidence OR house-to-house OR suspect OR interrogation OR identification OR proactive OR taskforce OR squad

**Table B1.2 Denning et al.'s (2009) systematic search locations**

ACADEMIC DATABASES	
Database Platform	Databases Searched
CSA	Criminal Justice Abstracts Sociological Abstracts SAGE Criminology SAGE Sociology SAGE Political Science
Informit	Australian Federal Police Digest CINCH Criminology
ProQuest	Dissertation and Theses Psychological Journals Social Science Journals Legal Module
Ovid	PsycEXTRA PsycINFO
Web of Knowledge	Arts and Humanities Citation Index Social Sciences Citation Index
Standalone Databases	Ingenta
GREY LITERATURE SOURCES AND LIBRARY CATALOGUES	
Scottish Institute for Policing Research Association of Police Authorities Association of Police Authorities Cambridge University Library and Dependent Libraries Catalogue	

## Appendix B2: NPIA Systematic Screening Process

Denning et al. (2009) conducted abstract screening of their search results according to the criteria outlined in Table B2.1. Eligible records from the abstract screening stage were then coded according to the criteria outlined in Table B2.2.

**Table B2.1. Denning et al.'s (2009) abstract screening criteria**

Exclusion Code	Details
Not serious crime	<p>Publications that did not relate to the investigation of the following crimes were excluded from the search:</p> <ul style="list-style-type: none"> <li>• Murder</li> <li>• Manslaughter</li> <li>• Attempted Murder</li> <li>• Infanticide</li> <li>• Wounding</li> <li>• Rape</li> <li>• Serious Sexual Assault</li> </ul> <p>Where the abstract did not state a particular crime type, publications were included.</p>
Serious crime, but excluded	<p>The following serious crimes were excluded from the search:</p> <ul style="list-style-type: none"> <li>• Arson</li> <li>• Robbery</li> <li>• Murder or Manslaughter as a result of a motor vehicle</li> <li>• Corporate Manslaughter</li> <li>• Domestic violence</li> <li>• Gang-related offences</li> <li>• Terrorist offences.</li> </ul>
Not investigative process	Publications that did not relate to the investigative process were excluded.
Investigative process, but excluded	<p>The following components of the investigative process were excluded from this review:</p> <ul style="list-style-type: none"> <li>• Forensic Science, including to all forensic science aspects of criminal investigation, e.g. DNA, fingerprinting, ballistics etc.</li> <li>• Profiling - refers to offender profiling, also called behavioral, psychological, personality, criminal profiling. Profiling processes of case linkage or linkage analysis are also to be excluded, as are modus operandi, signature, victimology, and crime scene reconstruction. Databases that assist with managing offence/offender information such as VICLAS and VICAP are also excluded.</li> <li>• Witness Management - refers to interviewing of witnesses and witness protection programs. This includes interviewing victims.</li> <li>• Post-charge Management - refers to the way records are managed once charges have been laid.</li> <li>• Trial Preparation - exclude all literature discussing how law enforcement prepare for trial.</li> </ul>

**Table B2.1. Denning et al.'s (2009) coding fields**

Coding Field	Options	Description
Design	Qualitative Quantitative Mixed Methods N/A	What research design has been used? Choose one. Where it is a theoretical piece, N/A would be appropriate. Mixed Method is defined as studies using a combination of qualitative and quantitative. Unless otherwise specified in the abstract, make the following assumptions about design: (1) survey or experimental indicate a quantitative design, and (2) case studies or interviews indicate a qualitative design.

Primary method	Experimental Survey Observations Interviews Case Studies Other N/A	What is the main method used? Choose one. If a theoretical piece, choose N/A.
Secondary method	Experimental Survey Observations Interviews Case Studies Other N/A	This category is for studies using more than one method. Choose one. Choose N/A if single method.
Research question	Process Outcome Both	Does the research focus on investigative processes (e.g. suspect interrogation), or the outcome of investigations? Outcome specifically refers to charge, arrest, conviction or failure (see outcome description for explanation of failure). If it is not one of these outcomes, then do not choose the outcome option.
Offence type	Murder Manslaughter Attempted Murder Infanticide Wounding Rape Serious Sexual Assault Generic (no offence specified) Other (specify multiples and unlisted offences).	Which offence is the focus of the research? If there is more than one, enter Other, and specify using the offence terms in the menu. E.g. rape and serious sexual assault. There may be instances where the offence type may be relevant but not listed. An offence such as kidnapping is not listed, but is relevant because it is likely to involve one of the listed offence types. Another example is organised crime, it is not listed, but is an activity that results in the offences listed. In these instances, identify the publication with an M in the eligibility column, and specify in the other category. E.g. Other, organised crime, or Other, kidnapping.
Outcome	Charge Arrest Conviction Failure Other, specify multiples. N/A	Which outcome/s are the focus of the research? If there is more than one, enter Other, and specify using the terms in the menu. E.g. Other, arrest and conviction. Failure refers to failure of the investigative process to achieve an outcome; including failure to arrest, failure to charge, or failure to convict. Failure would also include wrongful charge, arrests or convictions. Only enter the listed outcomes, do not make up your own. If none of these enter N/A.
Region	USA Canada North American Other South America United Kingdom Europe Asia Middle East Africa ANZ Australasia Other Antarctica N/A	Which region/s was the research conducted? If more than one, e.g. a comparative study, enter all relevant regions. For theoretical pieces, choose N/A. See the table over page for explanation of which countries are included in each item.
Population	Offender Criminal justice officials Civilians Other, specify multiples. N/A	What population is the sample drawn from? For combinations choose other and specify. E.g. Other, offender and civilians. For theoretical pieces, choose N/A.

## Appendix C: Global Policing Database Search Strategy

Higginson et al. (2015) combined the search terms listed in Table B1 to capture research that contained at least one policing term and one evaluation term within either the title, abstract, keywords or indexing term search fields across the search locations listed in Table B2. Specifically, the terms within each category were separated by OR and the then the grouped policing and evaluation terms were combined with AND (e.g., (police\* OR policing OR...) AND (analy\* OR experiment\* OR...)). Higginson et al. include a much larger list of search locations in their GPD protocol, however at the time of compiling this review, Version 1.0 of GPD contained the locations listed in Table B2.

**Table B1. Global Policing Database Search Terms**

Policing Search Terms	Evaluation Search Terms			
police* policing "law*enforcement"	analy* ANCOVA ANOVA "ABAB design" "AB design" baseline causa* "chi#square" "comparison condition*" "comparison group*" "control condition*" "control group*" correlat* covariat* "cross#section"	data "dependent variable*" effect* efficacy eval* experiment* "explanatory variable*" hypothes* impact* "independent variable*" intervent* interview* longitudinal MANCOVA MANOVA "matched group"	measure* "meta-analysis" "meta analysis" "odds#ratio*" "outcome variable*" outcome* paramet* "post-test" posttest predict* "pre-test" pretest "propensity score*" quantitative "quasi#experiment*" questionnaire	random* RCT regress* result* "risk#ratio*" sampl* "standard deviation*" statistic* studies study survey* "systematic review*" "t#test" "time#series" treatment* variance

**Table B2. Global Policing Database Version 1.0 Search Locations**

### SEARCH LOCATIONS

#### ACADEMIC DATABASES

##### ProQuest

Criminal Justice  
Dissertation and Theses Database (Social Sciences)  
Index Islamicus  
Political Science  
Periodical Archive Online  
Research Library (Social Science)  
Social Science Journals  
CSA Illumina  
Applied Social Sciences Index and Abstracts (ASSIA)  
International Bibliography of the Social Sciences  
Public Affairs Information Service (PAIS International)  
Social Services Abstracts  
Sociological Abstracts  
Worldwide Political Sciences Abstracts

##### EBSCO

Academic Search Premier  
Criminal Justice Abstracts  
EconLit  
MEDLINE with Full-Text

##### OVID

PsycARTICLES  
PsycEXTRA  
PsycINFO

##### World of Knowledge

Current Contents – Social and Behavioural Sciences Edition  
Web of Science  
Book Citation Index (Social Sciences and Humanities)

Conference Proceedings Citation Index (Social Sciences and Humanities)  
Humanities  
Social Science Citation Index

##### Informit

AGIS Plus Text  
Australian Criminology Database  
Australian Federal Police Database  
Australian Public Affairs Information Service Full-Text  
DRUG  
Health & Society Database  
Humanities and Social Sciences Collection (Law, Social Sciences subsets)

##### Standalone Databases/Open Access Databases

African Journals Online  
Alcohol and Alcohol Problems Science Database  
Cochrane Library  
DrugPolicy Alliance Library  
Evidence-Based Policing Matrix  
HeinOnline  
International Initiative for Impact Evaluation Database (3ie)  
JSTOR  
Sage Journals Online and Archive (Sage Premier)  
ScienceDirect  
SCOPUS  
SpringerLink  
Taylor & Francis Online  
Wiley Online Library

## Appendix D: Title and Abstract Screening Guidelines

### Title and Abstract Screening Overview

1. Use your Title and Abstract decision-making tree to help you navigate through the different screening scenarios that may arise.
2. Please read the title **and** abstract of the document in enough detail to be able to address the exclusion criteria **with certainty**.
3. **Remember: it is always better to include rather than exclude documents at this stage!**
4. After reading the title and abstract, select the **FIRST exclusion criterion that applies (if any)** and then complete the screening.
5. Make sure you work through the screening criteria from top to bottom and only select **one** criterion if you are excluding the record.
6. When you select an exclusion criterion, it will become highlighted and the text at the bottom of the form will read 'Title is NOT eligible'.
7. If you do not select any exclusion criteria the text will at the bottom of the form will read 'Title is eligible' and the document will proceed to the full-text eligibility screening stage.
8. When you have finished screening the document, click the 'Complete Screening' button at the bottom of the form. Your name and today's date should appear beside 'Screened by'. To move to the next document, click on the 'Go to First Unscreened Title' button at the top of the form.

### Screening Criteria

#### *Criterion 1: Document is not after 1950*

Select this criterion if:

- The document is dated before 1950
- The document is published after 1950, but **only** contains research that was conducted prior to 1950 (e.g., historical research).

If you think the research could include data collected or material dated after 1950, do not exclude the document.

#### *Criterion 2: Document is not unique*

Only select this criterion if you are certain that the document is an exact duplicate of another record in the database. For example, a conference paper and a journal article with the same authors reporting on the same study is two unique documents. However, when there are two copies of the same journal article, one document is not unique.

#### *Criterion 3: Document is not about police or policing*

Select this criterion if the document is clearly NOT about police or policing. For a document to be 'about' police or policing, there needs to be more than just a tangential link to police or policing. The core subject matter of the document or what looks to be a substantial portion of the document must be directly related to police or policing.

For the purposes of the GPD, we will only include public police or personnel employed by the public police. In general, a practitioner would be considered to be police if they have police-like powers (e.g., arrest/detainment, search and seizure). We will also include support staff working in a police agency (e.g., forensic investigators).

Other words for police include (but are not limited to):

- Campus police
- Constabulary
- Crime Scene / Forensic Investigator
- Detective
- Drug Enforcement Agency (DEA)
- FBI
- Interpol / Europol
- Law-enforcement
- Military police
- Secret service
- Sheriff / sheriff department
- SWAT

**Remember:** if you cannot categorically decide if the document is NOT about police or policing, it should be included. If you are *conceptually* unsure if the type of participants or subject of the document meets our definition of police, you can mark the record as 'Tricky' (make sure you also select the police criterion as well) and the Review Managers can mediate the record (e.g., do forensic investigators count as police?).

## SOME TIPS

The following points are important to consider when deciding if a document does not relate to police.

1. Documents that are only about private police or policing are not eligible for the Global Policing Database (if the document is about public AND private police, it may be included).
2. There are no limits on the type of police interventions or outcomes, so this means that a document may be eligible:
  - If police are the research participants
  - If police directly implement an intervention
  - If police implement an intervention in partnership other agencies
  - If a police practice is the subject matter of the document
  - If the document is evaluating technology that police use (e.g., breathalysers, forensic testing)
  - If the document is about something that could impact police or their practice in a substantive way (e.g., change in legislation, key legal ruling)



- If the research involved simulated police practices (e.g., interrogation techniques with ‘mock’ suspects)
3. Just because an abstract or title mentions police and/or a synonym for police/policing, that does not mean the document is necessarily about police. For example:
- An author may have spelled ‘policies’ as ‘polices’ and so may have been identified in the search, yet not relate to police or policing at all and would need to be excluded.
  - An abstract may refer to the use of police data, yet use of police data does not necessarily mean the document is about police or policing. The issue to consider in this situation is how the authors are using the data. For example, a document that appears to be using police data to examine an aspect of police practice would be included. However, a record that uses police-recorded crime data to examine patterns of crime without any reference to police practice would most likely be excluded.
  - An abstract may refer to crime but not mention police. Just because police deal with crime does not mean that this document relates to police.
  - You can also refer to your training materials for more examples on this point.

If a document does not mention police, policing and/or a synonym for police, it does not necessarily mean that the document should be excluded. Titles and/or abstracts can be suggestive of police or policing without using the term(s) explicitly. For example, an abstract may refer to emergency services personnel during a natural disaster or discuss something that would ordinarily fall in the purview of police practice (e.g., investigation of crimes, gathering evidence, controlling/preventing crime problems).

#### ***Criterion 4: Tricky / needs mediation***

Select this criterion if you are conceptually unsure whether a particular aspect of the title / abstract is eligible. For example, you may not be sure whether a particular type of practitioner is considered public police (e.g., Homeland Security) or you may not know if a document is a duplicate.

**When you select this criterion, please also select the criterion which makes the record ‘tricky’ and also complete the screening.**

#### ***Criterion 5: Not an eligible document type***

Only select this criterion if you are certain that the document is one of the following ineligible types of documents. Use the abstract/title to make this decision – **do not trust the ‘Reference Type’ field.**

Because this criterion is last, you must first determine whether the document is about police or policing. If the document is about police or policing, but is an ineligible document type, select this criterion. However, if the document is not about police or policing – even if it is an ineligible document type – exclude the document on the police criterion.

If you identify a type of document that you think may not be eligible, but that is not in this list, please select the ‘Tricky’ criterion **and** the ‘Not an eligible document type’ criterion so that the eligibility of the document type can be verified by the Review Managers.

- Advertisement (e.g., of upcoming conferences)
- Newspaper article
- Book review or book notes

- Editorial
- Erratum
- Epilogue or prologue
- Music, audio-visual material, movie or television show reviews
- Poetry
- Letters or letters to the editor, obituary
- Table of contents
- Pieces of original legislation
- Index, front matter, back matter, glossary
- Document listing publications received or abstracts that have been withdrawn
- Email interviews or radio/television transcripts

## Appendix E: Full-Text Eligibility Screening Guidelines

### Full-Text Eligibility Screening Overview

1. Please read the document in enough detail to be able to address the exclusion criteria **with certainty**.
2. Work through the screening criteria from top to bottom and select the **FIRST exclusion criterion that applies and then complete the screening. Do not select more than one exclusion criteria.**
3. When you select an exclusion criterion, it will become highlighted and the text at the bottom of the form will read '*Title is NOT eligible*'. If you do not select any exclusion criteria the document will proceed to the full-text eligibility screening stage and the text will at the bottom of the form will read '*Title is eligible*'.
4. When you have finished screening the document, click the '*Complete Screening*' button at the bottom of the form. Your name and today's date should appear beside '*Screened by*'. To move to the next document, click on the '*Go to First Unscreened Title*' button at the top of the form.
5. If you are having difficulty deciding on a particular criterion, please select the 'This is tricky/Requires mediation' button and then select the criterion that is making the screening difficult.
6. If you are unsure whether you understand any of the criteria, please speak with the Review Managers to obtain further training or direction.

### Stage 1 Screening Criteria

Screening Criteria	Information
Document is not dated after 1950	Select this criterion if the document is dated before 1950 or contains research that was conducted prior to 1950. <b>Note:</b> if a document contains research that <b>only</b> uses historical material dated before 1950, you can exclude the document on this criterion.
Document is not unique	Only select this criterion if you are certain that the document is an <b><u>exact duplicate</u></b> of another record in the database.  For example, a conference paper and a journal article with the same authors reporting on the same study are two unique documents. However, when there are two copies of the same journal article, one article is not unique.
Document does not report a quantitative comparison	Select this criterion if the document <i>does not</i> contain a <b>bivariate</b> or <b>multivariate</b> quantitative comparison. Exclude documents that only contain univariate quantitative comparisons.  A <b>univariate</b> quantitative comparison is one that makes a comparison <i>within</i> one variable or describes individual variables <i>separately</i> .  For example: a frequency table of the answers to one question; the description of a sample in terms of one variable at a time; the

	<p>description of the pattern of responses to variables exploring each variable on its own. The document should be excluded if it <i>only</i> contains univariate comparisons.</p> <p>Do not exclude time series analyses or spatial analyses. These are in fact bivariate as they are examining one variable over time (so time or space is the second variable).</p> <p>A <b>bivariate</b> quantitative comparison is one that compares two variables, to determine the empirical relationship between them.</p> <p>For example: a frequency table of the values of one variable against the values of another; <math>\chi^2</math>; before-and-after group means, counts or percentages; correlation coefficient; bivariate regression; independent or repeated measures <i>t</i>-test; time-series analyses; spatial analyses.</p> <p>A <b>multivariate</b> quantitative comparison is one that explores the association between more than two variables.</p> <p>For example: a frequency table of the values of one variable against the values of multiple variables; <math>\chi^2</math>; ANOVA; multiple regression.</p> <p><b>Please note:</b></p> <ul style="list-style-type: none"> <li>• <b>For simplicity</b>, include documents that include numerical data and symbols that represent particular statistical analyses. For example: <i>p</i> values, <i>B</i>, <i>r</i>, <i>d</i>, <i>g</i>, <i>t</i>, <i>F</i>, <math>\chi^2</math>.</li> <li>• Eligible comparisons can be in the form of raw numbers, percentages, counts, or the results of statistical tests. These can be reported in tables, figures with numerical labels, or in text.</li> <li>• There does not need to be a 'Results' section reported.</li> <li>• Include documents that do not contain statistical symbols, but contain numerical data that is represented in a way that <i>suggests comparisons between conditions</i> (e.g., time periods, groups, locations, categories, levels of an IV). Examples include: frequency tables; contingency tables; before-after or between-group means; counts; or percentages.</li> <li>• If the eligible quantitative comparison reported is taken from another piece of research and the authors do not provide their own results, the document is still eligible.</li> </ul> <p>The following examples are <b>excluded</b>, but this is <b>not</b> an exhaustive list:</p> <ul style="list-style-type: none"> <li>• Univariate descriptive statistics only.</li> <li>• Documents that only report a number or percentage of one variable under one condition at one time-point. These are univariate analyses. For example, a document that merely states that 5% of police departments use tasers in 2014 would be excluded, as there is no comparison between different police stations or over time.</li> <li>• Documents that contain formulae or equations that are <i>proposed</i> for</li> </ul>
--	---

	<p>modelling, but no modelling is performed using actual data.</p> <ul style="list-style-type: none"> <li>• Simulations using 'real' data are included; simulations using simulated data are excluded.</li> </ul>
Reference harvesting [checkbox]	Select this checkbox if you think that the document may be useful for harvesting research that may be eligible for the GPD.

## Stage 2 Screening Criteria

Screening Criteria	Information
Document is not about serious violent crime	<p>Select this criterion if the document is not about serious violent crime. For the purposes of this review, a serious violent crime includes the following offence types and victims/perpetrators can be individuals or groups of individuals (e.g., gangs):</p> <ul style="list-style-type: none"> <li>• Murder</li> <li>• Manslaughter</li> <li>• Rape or other sexual assault</li> <li>• Aggravated assault</li> <li>• Robbery</li> <li>• Aggregate violent crime with no specification of the type of crime</li> <li>• Other (specify in the textbox provided)</li> </ul> <p><b>Remember:</b></p> <ul style="list-style-type: none"> <li>• To be 'about' serious violent crime, the document must either focus on one of the crimes or contain a substantive portion that is about serious violent crime (i.e., one or two sentences or mere mention of serious violent crime is not sufficient for inclusion).</li> <li>• Different jurisdictions may call these crimes something different (e.g., grievous bodily harm, homicide, stabbing), so please keep this in mind during your screening (e.g., don't just search the article on these terms and exclude if the document doesn't contain them).</li> </ul> <p><b>Excluded types of violent crime:</b></p> <ul style="list-style-type: none"> <li>• Violent crimes where the perpetrator is a corporation or organisation should be excluded.</li> <li>• Documents where the violent crime is use-of-force by police should be excluded, <u>unless</u> the actions by police are being treated like a crime (i.e., investigation of officers, charging of officers etc).</li> <li>• Self-directed violence outcomes (i.e., acts or omissions perpetrated by an individual against himself or herself). Examples include suicide and non-suicidal self-harm.</li> <li>• Collective violence outcomes (i.e., acts or omissions perpetrated</li> </ul>

	by a state or large organized group against another state or large organised group). Examples include: terrorist activity, rioting, looting, smuggling, gang warfare, genocide, war, or political conflict.
Document does not report on an eligible type of outcome	<p>Select this criterion if the document does not report on an eligible type of outcome. For the purposes of this review, we are interested in case-level type outcomes. The following outcomes are eligible for the review:</p> <ul style="list-style-type: none"> <li>• Offender identification (this includes recall of information that could assist officers to identify an offender)<sup>1</sup>.</li> <li>• Arrest or apprehension</li> <li>• Confession</li> <li>• Conviction</li> <li>• Case closure/clearance (includes laying charges)</li> </ul> <p><b><u>Excluded types of outcomes:</u></b></p> <ul style="list-style-type: none"> <li>• Perceptions of case outcomes (e.g., police perceptions of arrest)</li> <li>• Measures of victim satisfaction</li> <li>• Perceptions of police or police practices</li> <li>• Crime rates</li> </ul>
Document is not about a police <i>investigative</i> technique	<p>Select this criterion if the document does not report on one or more police investigative techniques. For the purposes of this review, a police investigative technique includes any activity or strategy used by police to: identify offenders, arrest offenders, elicit confessions, close cases, or secure convictions.</p> <p>The police investigative period begins from the point at which a serious violent crime comes to the attention of the police (e.g., suspected, reported or detected) until the point when the case is closed or transitioned to another arm of the criminal justice system (e.g., judicial sector). A technique is not <i>investigative</i> if it comes before the detection of report of a crime.</p> <p>Examples include, but are <u>not limited</u> to:</p> <ul style="list-style-type: none"> <li>• Collection or testing of DNA or other physical evidence</li> <li>• Line-ups</li> <li>• Facial composites</li> <li>• Specialised task forces</li> </ul>

<sup>1</sup> An example would be where the document deals with the accuracy of offender details to aid in the identification of an offender.

	<ul style="list-style-type: none"> <li>• Deception detection techniques</li> <li>• Surveillance techniques</li> <li>• Psychological profiling</li> <li>• Interrogation and interview techniques</li> </ul>
Document does not report on a quantitative impact evaluation of a police investigative technique for serious violent crime case-level outcomes	<p>Select this criterion if the document does not contain:</p> <ol style="list-style-type: none"> <li>1. A quantitative impact evaluation <b>AND</b></li> <li>2. The impact evaluation is of a police investigative technique <b>AND</b></li> <li>3. The technique is used to investigate serious violent crime <b>AND</b></li> <li>4. The technique is evaluated using at least one of the eligible case-level outcomes.</li> </ol>
Research design	<p>Specify the type of research design used to evaluate the policing intervention by selecting one of the following options (see Appendix A for a definition of each of these designs):</p> <ul style="list-style-type: none"> <li>• Randomised experimental design</li> <li>• Regression discontinuity design</li> <li>• Matched control group design with pre-intervention baseline measures</li> <li>• Matched control group design without pre-intervention baseline measures</li> <li>• Unmatched control group designs with pre- intervention measures</li> <li>• Unmatched control group designs without pre-intervention measures</li> <li>• A design using multivariate controls that is not covered by other listed research designs (e.g., multiple regression)</li> <li>• Long interrupted time-series designs with <u>or</u> without a control group (<math>\geq 25</math> pre- and post-intervention observations (Glass, 1997))</li> <li>• Short interrupted time-series designs with control group (less than 25 pre- and 25 post-intervention observations (Glass, 1997))</li> <li>• Meta-analysis</li> <li>• Cross-over design (counterbalanced/randomised)</li> <li>• Raw correlational design</li> <li>• Other (use the textbox to specify the design)</li> </ul> <p><b>Note:</b> A control group can receive no treatment, 'business-as-usual' or an alternative treatment.</p>

## Appendix F: Inaccessible Documents

- A comparison of facial composite techniques. (1996). Royal Canadian Mounted Police Gazette, 58(4), 8-10.
- Abru, E. (2004). Putting the sources online. *New South Wales Police Service News*, 84(10), 30-31.
- Aldred, K. (2007). Sinister images sharing evidence, know-how key to stopping online abuse. *Royal Canadian Mounted Police Gazette*, 69(2), 7-9.
- Alonzo, A., & Cyr, M. (2009, August). *Investigative interviews with alleged victims of child sexual abuse*. Paper presented at the American Psychological Association Convention, Toronto, Canada.
- Anonymous. (2014). A survey of some well-known cases in which young people were convicted of very serious crimes based on false confessions. *Juvenile Justice Update*, 20(2), 3-16.
- Applegate, R. J. (2004). Problem-orientated policing in Plymouth. *Crime Prevention and Community Safety: An International Journal*, 6(2), 35-50. doi:10.1057/palgrave.cpcs.8140185
- Archick, K. (2011). US-EU cooperation against terrorism. In M. Conti & R. Bovér (Eds.), *Countering terrorism: U.S. efforts and country cooperation* (pp. 141-156). New York: Nova Science Publishers.
- Ask, K., & Alison, L. (2010). Investigators' decision-making. In P. A. Granhag (Ed.), *Forensic psychology in context: Nordic and international approaches* (pp. 35-55). Cullompton, UK: Willan Publishing.
- Atkinson, C. (2013). *Beyond cop culture: The cultural challenge of civilian intelligence analysis in Scottish policing* (Doctoral dissertation, University of Glasgow, Glasgow, Scotland).
- Atlas, R. (1990). "Offensible Space"—Law and Order Obstruction through Environmental Design. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 34(7), 570-574. doi: 10.1177/154193129003400708
- Australian Police Department Criminal Investigation Working Party. (1989). *Final Report*. Sydney, Australia: Author.
- Author unknown. (2006, June/July). A matter of intelligence. *Fraud Intelligence*, 17-19.
- Babak, M., Mohammadhossein, R., Haleh, T., Babak, B. G., & Shishevan Tahmineh, A. (2010). Successful treatment of body packers with many packages. *Indian Journal of Forensic Medicine & Toxicology*, 4(2), 20-22.
- Baka, A., & Garyfallou, A. (2011, July). *Social movements and collective identities in periods of crisis*. Paper presented at the Symposium on Political Discourses in the Context of "Greek Crisis", Istanbul, Turkey.
- Baker, E. R., & Dodge, F. B. (1979). *Criminal evidence and procedure*. London: Butterworth.
- Baldwin, J., & Moloney, T. (1992). *The conduct of police investigations: Records of interview, the defence lawyers role, and standards of supervision*. London: Her Majesty's Stationery Office.
- Barnes, M. A. (1976). *A case study of the special enforcement unit, California Department of Justice, Bureau of Narcotic Enforcement* (Master's thesis, California State University, Long Beach, California).



- Bennett, P., & Gibling, F. (1989). Can we trust our eyes? *Policing: An International Journal of Police Strategies and Management*, 5(4), 313-321.
- Bertoldo, D. (2012). Burden of proof. *WA Police News*, 8-11.
- Bilton, M. (2002). *Wicked beyond belief: The hunt for the Yorkshire Ripper*. New York: Harper Collins Publishers Limited.
- Bjelopera, J. P. (2012). American Jihadist terrorism: Combating a complex threat. In A. Hudson & E. Davidson (Eds.), *Domestic terrorism* (pp. 67-200). Hauppauge, New York: Nova Science Publishers.
- Blair, I. M. (1985). *Investigating rape: A new approach for police*. London: Croom Helm.
- Bloch, P. B., & Bell, J. (1976). *Managing investigations: The Rochester system*. Washington, DC: Police Foundation and Urban Institute.
- Bodó, B. (2002). *Tiszazug: A social history of a murder epidemic*. New York: Columbia University Press.
- Bottomley, A. K. (1991). *The impact of PACE: Policing in a northern force*. Hull, UK: Centre for Criminology and Criminal Justice.
- Bozza, C. M. (1978). *Criminal investigation*. Chicago, IL: Nelson Hall.
- Brinks, D. M. (2008). *The judicial response to police killings in Latin America: Inequality and the rule of law*. Cambridge, UK: Cambridge University Press.
- Brown, K. M., Keppel, R. D., & Weis, J. G. (2006). *Investigative case management for missing children homicides: Report II*. Seattle, WA: Washington Office of the Attorney General.
- Browning, S. L., Van Hasselt, V. B., Messer, S. C., Tucker, A. S., & Taylor, L. (2012, August). *Dealing with the mentally ill: Crisis intervention team efficacy in law enforcement*. Paper presented at the American Psychological Association Convention, Orla
- Brownlie, A. R. (Ed.). (1984). *Crime investigation: Art or science? Patterns in a labyrinth*. Proceedings from the Conference for Senior Police Investigators and their Specialist Colleagues, Christ Church, Oxford (September 1982). Edinburgh: Scottish Acade
- Büchler, H., Wagner, D., Grawert, A., & Fiedler, A. K. (1994). *Effectiveness and efficiency of temporary police detective units*. Wiesbaden, Germany: Bundeskriminalamt.
- Buckwalter, A. (1983). *Interviews and interrogations*. Boston, MA: Butterworth.
- Bulletin reports: Eyewitness evidence. (2001). *Law Enforcement Bulletin*, 70(7), 15.
- Burrell, W. D. (2009). Working smarter: Intelligence-led probation and parole. *Community Corrections Report on Law and Corrections Practice*, 16(3), 35.
- Campling, E. (1989). *The police*. London: Dryad.
- Cattaneo, C., & De Angelis, D. (2009). Odontology. In A. Jamieson & A. Moenssens (Eds.), *Wiley Encyclopaedia of Forensic Science*. Hoboken, NJ: John Wiley & Sons.
- Chang, D. H. (Ed.) (1979). *Introduction to criminal justice: Theory and application*. Dubuque, IA: Kendall/Hunt.
- Chappell, D., & Singer, S. (1973). *Rape in New York City: A study of material in the police files and its meaning*. Albany, NY: State University of New York.

- Chereches, R. M., Rus, D., Ajtai, N., & Sirlincan, E. O. (2010). Traffic injury prevention in Cluj-Napoca, Romania. *Injury Prevention*, 16, A147-A147.
- Choo, K., & Jang, J. O. (2009, November). *Human trafficking and smuggling of Korean women for sexual exploitation to the United States*. Paper presented at the American Society of Criminology Annual Meeting, Philadelphia, PA.
- Chu, V S., & Krouse, W. J. (2011). Gun trafficking and the Southwest Border. In K. M. Felton (Ed.), *Focus on crime, law and law enforcement* (pp. 87-114). Hauppauge NY: Nova Science Publishers.
- Chu, V. S. & Krouse, W. J. (2010). Gun trafficking and the Southwest Border. *Journal of Current Issues in Crime, Law & Law Enforcement*, 3(1/2), 105-134.
- Clark, N. K., & Stephenson, G. M. (Eds.). (1993). *Children, evidence and procedure*. Leicester, UK: British Psychological Society for the Division of Criminological and Legal Psychology.
- Clarke, G. (2011). *"Real" rape revisited: Exploring issues of gender and intoxication in contemporary English and Welsh criminal justice* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global database. (UMI No. U598968).
- Colaprete, F. A. (2002, October). Managing change in the investigative process: A process-centred approach to professional development and change management. *Police Chief*, 69(10), 121-126.
- Colaprete, F. A. (2007). *Internal investigation: A practitioner's approach*. Springfield, IL: Charles C Thomas.
- Cole, D. J. (1996). *A writer's guide to police organisation and crime investigation and detection*. London: Robert Hale.
- College of Law. (1979). *Arrest, search and interrogation*. London: Author.
- Colman, T. (1989). *Incident into evidence: Operational police skills*. London: McGraw-Hill.
- Colvin, M., & Noorlander, P. (1998). *Under surveillance: Covert policing and human rights standards*. London: Justice.
- Commission on Accreditation for Law Enforcement Agencies. (1982). *Discussion draft standards manual: A compilation of law enforcement standards prepared for purposes of review and comment by law enforcement agencies*. Manassas, VA: Author.
- Connor, P. (2005). *Blackstone's police investigator's Q&A*. Oxford: Oxford University Press.
- Conway, S., Cameron, R., Hermann, S., & Nelson, J.P (2011). Collecting, archiving, and utilizing critical infrastructure information. In M. Guarascio, G. Reniers, C. A. Brebbia, & F. Garzia (Eds.), *WIT Transactions on Ecology and the Environment: Volume 17 - Safety and Security Engineering*. doi 10.2495/SAFE110011
- Coombs, A. J. (1986). *An evaluation of the changing perceptions and treatment of rape victims by the police*. Uxbridge, UK: Brunel University.
- Cothran, A. S., & Jacquin, K. M. (2011). The effect of combined inductive and deductive training on profile accuracy. *American Journal of Forensic Psychology*, 29(1), 37-75.
- Coupe, R. T., & Ceccato, V. (2009, November). *Targeting strategies police response and sighting and arrest risks at non-residential burglaries*. Paper presented at the American Society of Criminology Annual Meeting, Philadelphia, PA.

- Cousens, M., Blair, R. M., & Thorpe, S. W. (Eds.). (1992). *Butterworths police and criminal evidence act cases*. London: Butterworths.
- Crelinsten, R. D., & Szabo, D. (1979). *Hostage-taking*. Lexington, MA: Lexington Books.
- Custody death: Sister loses action. (2011). *ConVerse*, 18-18.
- Cuthbert, M., Fulde, G., Kelly, R., Lovejoy, F. H., & Whealing, D. (1993). Investigation of the incidence and analysis of cases of alleged violence reporting to the accident and emergency centres of a metropolitan and rural hospitals: Final report for the Criminology Research Council. Sydney, Australia: Criminology Research Council.
- Davies, G., Fagan, J., & Carlis, A. (2009, November). *Race and selective enforcement in public housing*. Paper presented at the American Society of Criminology Annual Meeting, Philadelphia, PA.
- Dean, G., Fahsing, I. A., & Gottschalk, P. (2007). Qualitative and quantitative study of police investigative thinking styles. *International Journal of Knowledge and Learning*, 3(1), 76-87. doi: 10.1504/ijkl.2007.012601
- den Boer, M. (2002). *Organised crime: A catalyst in the Europeanisation of national police and prosecution agencies?* Maastricht, the Netherlands: European Institute of Public Administration.
- Di Vietro, S. (2010, November). *But what can I do? Domestic violence and cultural models of intervention*. Paper presented at the American Anthropological Association Annual Meeting, New Orleans.
- Dixon, D., & Travis, G. (2007). *Interrogating images: Audio-visually recorded police questioning of suspects*. Sydney, Australia: Institute of Criminology Press.
- Dolling, D., & Halbband, E. (1987). *Police investigative activities and principles of legality*. Wiesbaden, Germany: Sonderband.
- Donnelly, D., McDonald, A., McKay, J., Cairns, M., & Henderson, I. (1990). *Strathclyde police record office research project*. Strathclyde, Scotland.
- Donnelly, L. (2013). Use of quaternary proxies in forensic science | Use of Geology in Forensic Science: Search to Locate Burials. In S. A. Elias & C. J. Mock (Eds.), *Encyclopedia of Quaternary Science* (2nd ed., pp. 521-534). Amsterdam: Elsevier.
- Dutton, G. (1998). The Port Arthur shooting incident. *Australian Police Journal*, 52(4), 207-228.
- Elliott, J. F., & Sardino, T. J. (1971). *Crime control team*. Springfield, IL: Charles C Thomas.
- Etienne, P., Maynard, M., & Thompson, T. (2000). *The infiltrators*. London: Michael Joseph.
- Evans, R. (1993). *The conduct of police interviews with juveniles* (Royal Commission on Criminal Justice Research Study No. 8). London: Her Majesty's Stationery Office.
- Exposing the dangers of strangers online (2013). *Blueprint* (3), 32-33.
- Farris, J. R. (1982). *The police intelligence function* (Doctoral Dissertation). Available from ProQuest Dissertations & Theses Global database (UMI No. 303224385).
- Fields, L. (2012, November). *Building international dialogue on drug-facilitated sexual assault: Prevalence prevention and a pilot treatment*. Paper presented at the International Society for Traumatic Stress Studies (ISTSS) 28th Annual Meeting: Innovations to Expand Services and Tailor Traumatic Stress Treatments, Los Angeles, CA.

- Fletcher, C. (1991). *Pure cop: Cop talk from the street to the specialized units – bomb squad, arson, hostage negotiation, prostitution, major accidents, crime scene*. New York: Villard Books.
- Flora, R., & Keohane, M. L. (2013). *How to work with sex offenders: A handbook for criminal justice, human service, and mental health professionals* (2nd ed.). New York: Routledge.
- Flores, A. (2012). Once-banned mexican doc "Presunto Culpable" is on DVD. *Home Media Magazine*, 34(9), 12.
- Flosi, E. (2011). Sudden in-custody deaths: Exploring causality & prevention strategies. *Forensic Examiner*, 20(1), 30-48.
- Folk, J. F. (1971). *Municipal detective systems: A quantitative approach* (Technical Report No. 55). Cambridge, MA: Massachusetts Institute of Technology, Operations Research Center.
- Forbes, I. (1973). *Squad man*. London: W. H. Allen.
- Francis, B., Walsh, S. J., Hitchin, S. (2012). Australia signs on to the INTERPOL DNA database. *Australian Police Journal*, 66(1), 24-27.
- Fullwiley, D. (2011). Can DNA "witness" race? Forensic uses of an imperfect ancestry testing technology. In Krinsky, S., & Sloan, K. (Eds.), *Race and the genetic revolution: Science, myth, and culture* (pp. 116-126). New York: Columbia University Press.
- Galeano, M.G., Martinez, L., & Coronel, E. (2010). Interdisciplinary attention program for women victims of violence older than 14 years old prevention of lesions – Developed in Mar del Plata-Argentina 2003–2008 sexual violence and its consequences. *Injury Prevention*, 16(Suppl 1), A135. doi: 10.1136/ip.2010.029215.483
- Garcia-Sanchez, I. M., Rodriguez-Dominguez, L., & Parra-Dominquez, J. (2011). The relationship between police effectiveness and crime rates. In A. E. Hasselme (Ed.), *Crime: Causes, types and victims* (pp. 110-125). Hauppauge, NY: Nova Science Publishers.
- Gibson, D. C. (2006). *Serial murder and media circuses*. Westport, CT: Praeger Publishers.
- Gilbert, G. (2011). Chilling in the extreme. *Australian Police Journal*, 65(4), 164-173.
- Glomseth, R., & Gottschalk, P. (2005). Research propositions for determinants of police investigation performance. *Electronic Government, an International Journal*, 2(3), 292-304.
- Goodman, A., & Healy, J. (2009, November). *Exploring the reasons behind a reduction in hate crime figures in an inner London district*. Paper presented at the American Society of Criminology Annual Meeting, Philadelphia, PA.
- Goodyear-Brown, P. (2011). *Handbook of child sexual abuse: Identification, assessment, and treatment*. Hoboken, NJ: John Wiley and Sons.
- Gopal, N., & Nyameka, D. (2008). Rape survivors' experiences of the criminal justice system: (CJS) Case study - Rape Crisis Centre Port Elizabeth. *Acta Criminologica*, 21(2), 40-58.
- Gottschalk, P., & Berg, M.E. (2007). Information systems in the value shop business of police investigations. *International Journal of Business and Systems Research*, 1(1), 47-60.
- Gozna, L. (2007). Tackling ecological validity: Conducting observations in a police-suspect interview. *Issues in Forensic Psychology*, 6, 57-63.
- Gozna, L., & Prendergast, J. (2008). Increasing innovation in applied research: Bridging the investigative/clinical divide. *Issues in Forensic Psychology*, 8, 10-20.
- Greenwood, C. (1979). *Police tactics in armed operations*. Boulder, CO: Paladin Press.

- Gribble, L. R. (1974). *Famous stories of the Murder Squad*. London: Barker.
- Griffin, P., Davis, J., King, C., & Finello, C. (2013, July). *Developments in diversionary efforts for justice-involved veterans with mental health problems*. Paper presented at the American Psychological Association Convention, Honolulu, HI.
- Grisham, J. C. (1987). "Hypnotically refreshed" testimony. *Monitor on Psychology*, 18(6), 41.
- Grubb, A., & Brown, S. (2012). Hostage (crisis) negotiation: The potential role of negotiator personality, decision-making style, coping style and emotional intelligence on negotiator success. *International Journal of Emergency Mental Health*, 14(1), 41-55
- Gudjonsson, G. H., & Bownes, I. (1992). The relationship between attribution of blame for criminal offenses and the reasons why suspects confess during custodial interrogation. *Journal of Forensic Science Society*, 32(3), 209-213.
- Guy, K. L., & Huckabee, R. G. (1988). Going free on a technicality: Another look at the effect of the Miranda decision on the criminal justice process. *Criminal Justice Research Bulletin*, 4(1), 1-3.
- Guzik, K. (2009). *Arresting abuse: Mandatory legal interventions, power, and intimate abusers*. De Kalb, IL: Northern Illinois University Press.
- Hall, A. (2002). *Crime busters*. London: Time Warner.
- Harfield, C. (2008). *The handbook of intelligent policing: Consilience, crime control, and community safety*. Oxford: Oxford University Press.
- Harfield, C., & Harfield, K. (2005). *Covert investigation*. Oxford: Oxford University Press.
- Harfield, C., & Harfield, K. (2008). *Intelligence: Investigation, community, and partnership*. Oxford: Oxford University Press.
- Hartley, J. (2012). Political leadership and its development. In A. Weinberg (Ed.), *The psychology of politicians* (pp. 97-119). New York: Cambridge University Press.
- Hartwig, M., Granhag, P. A., & Stromwall, L. A. (2007). *Strategic use of evidence: Deception detection as a function of interview style*. Goteborg, Sweden: Goteborg University.
- Hazelwood, R., & Michaud, S.G. (2001). *Dark dreams: Sexual violence, homicide, and the criminal mind*. New York: St. Martin's Press.
- Her Majesty's Inspectorate of Constabulary. (2000). *Policing London: "Winning consent": A review of murder investigation and community & race relations issues in the Metropolitan Police Service*. London: Home Office.
- Herridge, R., & Hilliard, B. (1994). *Believe no one*. London: Warner.
- Hewson, B.T., & Levi, M. (1993). *Seizure of confidential material: PACE special procedure*. London: Butterworths.
- Hofner, M. C., Burquier, R., Dtraz, J., Romain, N., Drer, S., ..., & Mangin, P. (2010). Evaluation of a 10 years violence prevention programme in Switzerland. *Injury Prevention*, 16(1), A104-A289. doi: doi:10.1136/ip.2010.029215.376
- Holmes, R.M., & De Burger, J. (1988). *Serial murder*. Newbury Park, CA: Sage Publications.
- Home Office Scientific Development Branch. (1987). *Fingerprint development handbook* (2nd ed.). London, UK: Home Office.
- Home Office. (1999). *Intrusive surveillance: Code of practice pursuant to Section 101(3) of the Police Act 1997*. London: The Stationary Office.

- Horswell, J., & Maley, J. (1995). Murder of Ross Anthony Browning. *Australian Police Journal*, 49(3), 117-130.
- Hotspots, targets and all things intelligence. (2003). *Policing Issues and Practice Journal*, 11(4), 26-38.
- Howell, N. N., Amos, B. R., & Coker, K. L. (2013, July). *Respect, the two-edged sword: inner-city youth's survival through respect*. Paper presented at the American Psychological Association Convention, Honolulu, HI.
- Howells, K., & Ward, M. (1994). Intellectual impairment, memory impairment, suggestibility and voir dire proceedings: A case study. *Medicine, Science and the Law*, 34(2), 176-180.
- Huang, H. (2013). *Out of home placement location and juvenile delinquency: The investigation of neighborhood impact on child welfare population's juvenile justice involvement* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global database. (UMI No. 3632048)
- Hultquist, P. (2013). *The causes and consequences of state repression in internal armed conflict: Sub-state capacity and the targets of state violence* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global database. (UMI No. 3601191)
- Implementing Website Spoofing Response Procedures. (2011). *Bank Security Report*, 40(11), 2.
- In Brief Kansas. (2012). *Arrest Law Bulletin*, 36(8), 3-6.
- Ingemann-Hansen, O., & Brink, O. (2010). Sexual victimisation and legal outcome by documentation of sperm and alcohol. *Injury Prevention*, 16, A177-A177.
- Ingram, J. L., & Klotter, J. C. (2009). Cases relating to Chapter 4 - Proof via evidence. In J. L. Ingram (Ed.), *Criminal evidence* (10th ed., pp. 719-725). Boston: Anderson Publishing.
- Ingram, J. L., & Klotter, J. C. (2009). Results of examinations and tests. In J. L. Ingram (Ed.), *Criminal evidence* (10th ed., pp. 587-634). Boston, MA: Anderson Publishing, Ltd.
- Innes, M. (2003). *Investigating murder: Detective work and the police response to criminal homicide*. Oxford: Oxford University Press.
- Irving, B., & Hilgendork, L. (1980). *Police interrogation: The psychological approach* (Great Britain Royal Commission on Criminal Procedure Research Study No. 1 and 2). London: Her Majesty's Stationery Office.
- Irving, B.L., & McKenzie, I.K. (1989). *Police interrogation: The effects of the Police and Criminal Evidence Act 1984*. London: Police Foundation.
- Irving, B.L., Dunnighan, C., & McKenzie, I.K. (1993). *Human factors in the quality control of CID investigations*. London: Her Majesty's Stationery Office.
- Jackson, T., & Parkin, W. (2009, November). *Comparing extreme far-right homicide cases: The role of snitching*. Paper presented at the American Society of Criminology Annual Meeting, Philadelphia, PA.
- Jenkins, P. (1998). *Covert surveillance techniques: The manual of covert surveillance training*. Keighley: Intel.
- Justice Society. (1994). *Unreliable evidence? Confessions and the safety of convictions*. London: Justice.
- Katsampes, P. L. (1971). Informants: Motivations and inducements. *Police*, 16(4), 52-53.

- Keane, K. (2011). Interview and interrogation how good are we at getting to the truth? *Journal of California Law Enforcement*, 45(4), 24-29.
- Kebbell, M. R., & Evans, J. (2009, December). Pro-active targeting of high-risk offenders: An approach to criminal investigation and intelligence collection. Paper presented at the Centre of Excellence in Policing and Security (CEPS) Criminal Investigations Workshop, Canberra, Australia.
- Kieffer-Adrian, R. (1995, May). Street level intelligence gathering. *Law and Order*, 43(5), 31-34.
- Kimura, Y. (2014). Forensic analysis in the Wakayama arsenic case. *Forensic Science Review*, 26(2), 145-152.
- Kintz, P. (2009). Hair: Toxicology. In A. Jamieson & A. Moenssens (Eds.), *Wiley encyclopaedia of forensic science*. Hoboken, NJ: John Wiley & Sons.
- Kirby, D. (2007). *You're nicked! Further memoirs from the real Sweeney on life in the serious crime squad*. London: Constable & Robinson.
- Kocsis, R. N. (2013, September). *Mini-workshop: An introduction to the principles and practice of psychological profiling of aberrant violent crimes*. Paper presented at the New Zealand Psychological Society Annual Conference, Auckland, New Zealand.
- Koegl, C. J. (2011). *High-risk antisocial children predicting future criminal and health outcomes* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global database. (UMI No. U581046).
- Komter, M. L. (2002, July). *Recording practices and interrogation techniques in Dutch police interrogations*. Paper presented at the International Sociological Association World Congress of Sociology, Brisbane, Australia.
- Koper, C., Taylor, B., White, M., & Roush, J. (2009, November). *A randomised experiment comparing problem-solving and directed patrol at violent crime hot spots*. Paper presented at the American Society of Criminology Annual Meeting, Philadelphia, PA.
- Kozenczak, J. R., & Kozenczak, K. M. (2011). The value of the polygraph technique in a serial murder investigation. *Polygraph*, 40(3), 157.
- LaFave, W. R. (2004). *Search and seizure: A treatise on the Fourth Amendment* (4<sup>th</sup> ed., Vol. 4). West Group Publishing.
- Laney, G. P. (2011). Sex offender registration and community notification law: Recent legislation and issues. In T. G. Sandoval (Ed.), *Adam Walsh Child Protection and Safety Act: Analysis and law* (pp. 109-152). Hauppauge NY: Nova Science Publishers.
- Laster, K. (2011, September/October). Fourth Amendment. *Probation & Parole Law Reports*, 32(4), 65-65.
- Lavery, T., & Schuck, A. (2009, November). *Issues with practitioner use of crime hot spot mapping techniques*. Paper presented at the American Society of Criminology Annual Meeting, Philadelphia, PA.
- LeBeau, M. A., & Montgomery, M. A. (2010). Challenges of drug-facilitated sexual assault. *Forensic Science Review*, 22(1), 1-6.
- Legault, R., & Hendrickson, J. (2009, November). *Preventing firearms use by terrorists in the US through enhanced law enforcement and intelligence cooperation*. Paper presented at the American Society of Criminology Annual Meeting, Philadelphia, PA.

- Legewie, J. (2014). Racial profiling in stop-and-frisk operations: How local events trigger periods of increased discrimination. Indexed on Social Science Research Network Working Paper Series website <http://ssrn.com/abstract=2388410>
- Leigh, L. H., & Zedner, L. (1992). *A report on the administration of criminal justice in the pre-trial phase in France and Germany* (Royal Commission on Criminal Justice Report). London: Her Majesty's Stationery Office.
- Levy, H. B., Sheldon, S. H., & Conte, J. R. (1986). Special intervention programs for child victims of violence. In M. Lystad (Ed.), *Violence in the home: Interdisciplinary perspectives* (pp. 169-192). Philadelphia, PA: Brunner/Mazel.
- Lidstone, K. W., & Bevan, V. (1984). *Search and seizure under the Police and Criminal Evidence Act 1984: A report of research into the police use of search powers provided by the Police and Criminal Evidence Act 1984*. Sheffield, UK: Sheffield University,
- Lindsay, R. C. L., Ross, D. F., Read, J. D., & Toglia, M. P. (2007). *The handbook of eyewitness psychology: Volume II - Memory for people*. Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Linton, S. L. (2013). *Urban redevelopment, injection drug use, and drug market activity in Baltimore, Maryland, 2000-2010* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global database. (UMI No. 3578792)
- Loewy, A. H., & LaFrance, A. B. (1996). *Criminal procedure: Arrest and investigation*. Cincinnati, OH: Anderson Publishing.
- Lunze, K. (2013). *Health and human rights: Advocacy tools for structural HIV prevention among Russian drug users*. Available from ProQuest Dissertations & Theses Global database. (UMI No. 3575374).
- Lynn, M. C. (2014). *Difficult decisions: An evaluation of the Jane Doe sexual reporting policy* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global database. (UMI 3624382).
- Lyons, A., & Truzzi, M. (1992). *The blue sense: Psychic detectives and crime*. New York: Mysterious Press.
- Lyons, W., Umphrey, M. M., & Cooney, M. (1997). Criminal law: The technologies of policing. *Studies in Law, Politics, and Society*, 16, 103-251.
- Manley, D. K., & Bravata, D. M. (2009). A decision framework for coordinating bioterrorism planning: Lessons from the BioNet Program. *American Journal of Disaster Medicine*, 4(1), 49-57.
- Marcus, D. K., Anthony, C. M., Davis, K. M., Fernandez, K., Torres, A. N., & Lyons, P. M. (2003, August). *Homophobia and police judgments of culpability*. Poster presented at the annual meeting of the American Psychological Association, Toronto, Canada.
- Marlow, A. (1989). The practice of detective work in a country force. *The Criminologist*, 13(3), 130-135.
- Martellozzo, E. (2009, November). *Understanding on line grooming in the 21st century: A case study of the London Metropolitan Police*. Paper presented at the American Society of Criminology Annual Meeting, Philadelphia, PA.



- Masip, J., Garrido, E., & Herrero, C. (2004). When did you conclude she was lying? The impact of the moment the decision about the sender's veracity is made and the sender's facial appearance on police officers' credibility judgments. *Polygraph*, 33(3), 156-189.
- Mawby, R. (1979). *Policing the city*. Westmead, UK: Saxon House.
- Maxwell, A., Anisha, E., Ojugbana, C., & Unoka, C. (2010). Addressing illegal road blockage by law enforcement agents and its attendant road deaths. *Injury Prevention*, 16, A166-A166.
- Mazeika, D. (2014). *General and specific displacement effects of police crackdowns: Criminal events and "local" criminals* (Doctoral dissertation, University of Maryland, Maryland, US).
- Mazerolle, P., Fitzgerald, R., Bond, C., & Western, J. (2009, November). *Does "one size fit all"? Identifying gender differences in subtypes of delinquent behaviour*. Paper presented at the American Society of Criminology Annual Meeting, Philadelphia, PA.
- McAllister, H. (2007). Mug books: More than just large photospreads. In R. C. L. Lindsay, D. F. Ross, J. D. Read, & M. P. Toglia (Eds.), *The handbook of eyewitness psychology: Volume II - Memory for people* (pp. 35-58). Mahwah, NJ: Lawrence Erlbaum Assoc
- McCabe, S., & Sutcliffe, F. (1978). *Defining crime: A study of police decisions* (Centre for Criminological Research Occasional Paper No. 9). Oxford: Blackwell.
- McConville, M., & Hodgson, J. (1993). *Custodial legal advice and the right to silence*. London: Her Majesty's Stationery Office.
- McConville, M., Sanders, A., & Leng, R. (1991). *The case for the prosecution: Police suspects and the construction of criminality*. London: Routledge.
- McGregor, K. (1996). Children's voices. *Youth Law Review*, 33, 10-11.
- McKinley, A. (2010, April). Death of innocents child homicide in Australia. *Policing Issues and Practice Journal*, 18(1), 48 - 54.
- McMonigle, S. (1995). Victim support which exists for children. *Vocal Voice*, 1(25), 25-28.
- Medalia, J. (2012). Detection of nuclear weapons and materials: Science, technologies, observations. In I. Anderson & R. J. Figgins (Eds.), *Globalization: Background, agreements and current issues* (pp. 129-230). New York: Nova Science Publishers.
- Melanson, P. H. (1989). *The Murkin Conspiracy: An investigation into the assassination of Dr Martin Luther King Jr*. New York: New Praeger.
- Mendias Canale, C. (2000). *An analysis of police officers' decision making* (Doctoral dissertation, Univeristy of New South Wales, Sydney, Australia).
- Mind the gap. (1996). *Policing Today*, 2(2), 20-24.
- Mofokeng, J. T. (2012). Perspectives on supervision and mentorship within the South African Police Detective Service. *Acta Criminologica: CRIMSA Conference Special Edition No. 1*, 70-84.
- Monahan, T. (2009, November). *"Blossoming" surveillance: Exploring DHS fusion centres*. Paper presented at the annual American Society of Criminology conference, Philadelphia, PA.
- Monahan, T. (2010, July). *Mapping concerns with homeland security fusion centres*. Paper presented at the XVII ISA World Congress of Sociology: Sociology on the move, Gothenburg, Sweden.

- Moore, K. D. (2013). *Visualising violence: The ethics of photographic evidence in the domestic violence trial and popular culture* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global database. (UMI No. 3567714).
- Morello, F. P. (1982). *Juvenile crimes against the elderly*. Springfield, IL: Charles C Thomas.
- Morina, A. D. (2012). *Crime rates types and hot spots*. New York, US: Nova Science Publishers.
- Morris, J. (1983). *Police informant management: A guide for the police use of contributors*. Orangevale, CA: Palmer Enterprises.
- Moss, A., & Skinner, K. (2006). *The Scotland Yard files: Milestones in crime detection*. Kew, UK: National Archives.
- Moston, S., & Stephenson, G. M. (1993). *The questioning and interviewing of suspects outside the police station* (Great Britain Royal Commission on Criminal Justice Research Study No. 22). London, UK: Her Majesty's Stationery Office.
- Moston, S., Stephenson, G., & Williamson, T. (1990). *Police interrogation styles and suspect behaviour: Summary report to the Police Requirements Support Unit, Home Office*. Canterbury, UK: Institute of Social and Applied Psychology, University of Kent.
- Mukherjee, S. (2013). *Colonial origins of Maoist insurgency in India: Historical legacies of British indirect rule* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global database. (UMI No. 3578419).
- Mulla, S. (2010, April). *The limits and meaning of DNA in sexual assault investigation*. Paper presented at the Central States Anthropological Association Meeting, Madison, WI.
- Murray, C. E., White, J., Nemati, H., Chow, A., Marsh, A., & Edwards, S. (2014). A community considers a Family Justice Center: Perspectives of stakeholders during the early phases of development. *Journal of Aggression, Conflict and Peace Research*, 6(2), 116-128.
- New Jersey State Law Enforcement Planning Agency. (1972). *Criminal justice plan for New Jersey*. Trenton, NJ: Author.
- New policing profession emerging. (2006). *Australian National Security Magazine*, 16-19.
- Nicholson, J. (2009, November). *Policing and rising female youth offending: Explaining the "phenomenon"*. Paper presented at the American Society of Criminology Annual Meeting, Philadelphia, PA.
- Nicholson, W., & Harrison, S. (1996). *International evidence gathering - Are we succeeding?* London: Home Office, Police Research Group.
- Nikolou-Walker, E. (2009). Methods and methodology: A study on work-based learning research tools for career development. In V. C. X. Wang (Ed.), *Handbook of research on e-learning applications for career and technical education: Technologies for vocational training* (pp. 628-637). Hershey, NY: Information Science Reference.
- Nislow, J. (2005, January). Working together: A case study. *Law Enforcement News*, 31(628), 1.
- Nixon, K. (2009). *The development and validation of a domestic abuse risk identification and management tool* (Doctoral dissertation, University of Liverpool, United Kingdom).
- Noakes, J. A. (1994). A "new breed of detective": The rise of the FBI Special Agent. *Studies in Law, Politics and Society*, 14, 25-42.

- Noble, H. B. (1978). The Major Offense Bureau: Concentrated justice. *Police Magazine*, 1(4), 55-62.
- O'Hanlon, K. (2013). R. v Clift (Leigh George); R. v Harrison (Brian Leslie). *Criminal Law Review*, (6), 506-510.
- Oldfield, R. W. (1988). *The application of criminal intelligence analysis techniques to major crime investigation: An evaluation study*. London, UK: Home Office, Scientific Research and Development Branch.
- Olley, G. (2013, July). *The science of adaptive behaviour assessment in Atkins cases*. Paper presented at the American Psychological Association Convention, Honolulu, HI.
- Palmer, D. L. (2004). *The investigation of deaths in custody and as a result of police action in South Africa: Has civilian involvement increased police accountability?* (Doctoral dissertation, University of Essex, United Kingdom).
- Palmiotto, M. J. (1984). *Critical issues in criminal investigation*. Cincinnati, OH: Anderson Publishing Company.
- Peleg, K., Gopher, A., Jaffe, D. H., Siman-Tov, M., & Almog, S. (2010). Comparison of blood alcohol levels with breath alcohol levels measured using the Drager 7110 MKIII breathalyzer. *Injury Prevention*, 16, A147-A148.
- Pennsylvania Criminal Justice Planning Board. (1970). *The comprehensive plan for the improvement of criminal justice in Pennsylvania*. Harrisburg, PA: Author
- People with intellectual disabilities. (2003). *Policing Issues and Practice Journal*, 11(2), 17-25.
- Plimmer, J. (1998). *In the footsteps of the Whitechapel murders: An examination of the Jack the Ripper murders using modern police techniques*. Sussex, UK: Book Guild.
- Police science and technology review* [Entire Issues 1 – 7]. (1995). London: Police Review Publishing.
- Powis, D. (1977). *The signs of crime: A field manual for police*. London: McGraw-Hill.
- Preventing crime through intelligence-led policing: Are we there yet? (2005). *Journal of the Australian Institute of Professional Intelligence Officers*, 14(1), 27-44.
- Prins, L. (1987). Scientific and technical aids to police interview: Investigative hypnosis (Part 4). *Australian Police Journal*, 41(2), 72-80.
- Proulx, J., Beauregard, E., Cusson, M., & Nicole, A. (Eds.). (2007). *Sexual murderers: A comparative analysis and new perspectives*. New York: John Wiley & Sons.
- Prunckun, H. W. (1990). *Special access required: A practitioner's guide to law enforcement intelligence literature*. London: Scarecrow Press.
- Pyke, P. (2007). Death on Dili streets. *Association News (Police Association of Tasmania)*, 11(1), 41.
- Queensland Police Service Sexual Offences Investigation Squad. (1993). *Sexual assault victim survey: Preliminary results*. Brisbane, Australia: Queensland Police Service.
- Randall, S. C., & Rose, V. M. (1979, August). *The effect of police perceptions on the processing of rape/sexual assault cases*. Paper presented at the meeting of the Society for the Study of Social Problems, Boston.

- Rao, C. (2011, October). *Experience of starting a child response unit at a teaching hospital*. Paper presented at the ISPACAN Asia Pacific Conference on Child Abuse & Neglect (APCCAN), Child Abuse & Neglect in Asia Pacific Countries: Opportunities, New Delhi, India.
- Rapist's Hollywood dream arrested. (2009). *Blueprint*, (23), 16-17.
- Reese, J. T. & Horn, J. M. (Eds.). (1988). *Police psychology: Operational assistance*. Washington, DC: US Department of Justice, Federal Bureau of Investigation.
- Reiser, M., Ludwig, L., Saxe, S., & Wagner, C. (1979). An evaluation of the use of psychics in the investigation of major crimes. *Journal of Police Science and Administration*, 7(1), 18-25.
- Rice, T., Trent, R., Bernacki, K., & Rice, J. (2010). Trauma centre-based surveillance of non-traffic pedestrian collision injury among young children in California. *Injury Prevention*, 16, A99-A100.
- Roberts, K. A., & Herrington, V. (2011). Police interviews with suspects: International perspectives. In J. Kitaeff (Ed.), *Handbook of police psychology* (pp. 383-400). New York, NY, US: Routledge.
- Ross, D. L. (2013). Section 1983 Actions in Law Enforcement. In D. L. Ross (Ed.), *Civil liability in criminal justice* (6th ed., pp. 343-387). Boston: Anderson Publishing, Ltd.
- Ross, J. I. (1993). *The politics and control of police violence in New York City and Toronto* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global database (UMI No. 9320475).
- Rossmo, K., Davies, A., & Patrick, M. (2004). *Exploring the geo-demographic and distance relationships between stranger rapists and their offences* (Special Interest Series Paper 16). London: Home Office Research, Development and Statistics Directorate.
- Roussell, A. (2013). *Re/Presenting the community: Power, race, and division in South LA's community policing program* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global database. (UMI No. 3566054).
- Roycroft, M. (2009). *Solving factors and decision-making in hard to solve murder enquiries* (Doctoral dissertation, University of Surrey, United Kingdom). Retrieved from <http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.529444>
- Rudd, R. A., D'Andrea, L. M. (2013). Professional support requirements and grief interventions for parents bereaved by an unexplained death at different time periods in the grief process. *International Journal of Emergency Mental Health and Human Resilience*, 15(1), 51-68.
- Ruibyte, L. (2011, October). *Problems and topicalities of investigative interviewing in Lithuania*. Paper presented at the International Conference, New Challenges in Legal Psychology: Theory and Practice, Vilnius, Lithuania.
- Sampson, F. (2000). *Blackstone's Police Manual: Crime 2000*. London: Blackstone Press.
- Sanders, A. (1989). *Advice and assistance at police stations and the 24 Hour Duty Solicitor Scheme: A report to The Lord Chancellor*. London: U.K. Lord Chancellor's Department.
- Santiago, M. (2000). *Europol and police cooperation in Europe*. Lewiston, NY: Edwin Mellen Press.
- Saulsbury, W., Hibberd, M., & Irving, B. L. (1994). *Using physical evidence: An examination of police decision making*. London: The Police Foundation.

- Savion, J. Cunliffe, T. B., Jenkins, A. S., & Osorio-Caicedo, C. (2013, July/August). *The OCPD psychopath: Implications for law enforcement and corrections*. Paper presented at the American Psychological Association Convention, Honolulu, HI.
- Scheibe, R. O. (1995). *Factors affecting the contents of children's statements in sexual abuse cases* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global database (UMI No 9608658).
- Schuster, R. L. (1978). *Violent juvenile offenders: A longitudinal cohort analysis* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global database. (UMI No. 7819660).
- Sear, L., & Stephenson, G. M. (1997). Interviewing skills and individual characteristics of police interrogators. In G. M. Stephenson & N. K. Clark (Eds.), *Procedures in criminal justice: Contemporary psychological issues* (Issues in Criminological and Legal Psychology No. 29) (pp. 27-34). Leicester: British Psychological Society.
- Seelke, C. R. (2009). Gangs in Central America. In K. M. Felton (Ed.), *Focus on crime, law and law enforcement* (pp. 67-86). Hauppauge NY: Nova Science Publishers.
- Seelke, C. R. (2011). Gangs in Central America. In S.P. Kovac & A.N. Benes (Eds.), *Central America: Security challenges* (pp. 47-76). United States: Nova Science Publishers.
- Seleye-Fubara, D., & Etebu, E.N. (2011). Post-mortem findings of victims of sexual assault: A study of 15 autopsies in the Niger Delta region of Nigeria. *The Nigerian Postgraduate Medical Journal*, 18(4), 262-265.
- Shap, K. (2014). Island in the street: Analysing the function of gang violence from a culture and conflict perspective. *Journal of Aggression, Conflict and Peace Research*, 6(2), 78.
- Sheldon, K. (2012). Internet sex offences. In B. Winder & P. Banyard (Eds.), *A psychologist's casebook of crime: From arson to voyeurism* (pp. 117-136). New York: Palgrave Macmillan.
- Shepherd, G., & Hinojosa, B. (2009, November). *Turmoil in Arizona: The case of the eight year old interrogated in Arizona*. Paper presented at the American Society of Criminology Annual Meeting, Philadelphia, PA.
- Shettar, S. S., & Karpoor, C. (2010). Forensic odontology: The role of dentist. *Indian Journal of Forensic Medicine & Toxicology*, 4(1), 44-46.
- Shooting in the dark. (1998, March/April). *International Police Review*, 6, 47-48.
- Sidhu, M., Prahbjot, M., & Prahbjot, G. (2011, Oct 6-9). *Victims of child abuse: Intervention and management experiences of a child helpline*. Paper presented at the 9th ISPACAN Asia Pacific Conference on Child Abuse & Neglect, Child Abuse & Neglect in Asia Pacific Countries: Challenges and Opportunities, New Dehli.
- Signed and sealed. (1997, November/December). *International Police Review*, 4, 44.
- Simms, B. W. (1984). *The criminal investigation process model* (Doctoral dissertation, Queen's University, Kingston, Canada).
- Simpson, B. A. (1986). The polygraph: Concept, usage and validity. *Psychology: A Quarterly Journal of Human Behaviour*, 23(1), 42-45.
- Simpson, K. (1978). *Police: The investigation of violence*. Plymouth: Macdonald and Evans.
- Slater, A. (1994). *Identification parades: A scientific evaluation*. London: Home Office, Development and Statistics Directorate.

- Smart, H., Watson, J., & Sampson, F. (2002). *Blackstone's Police Q & A: Crime*. Oxford: Oxford University Press.
- Smith, C. (2011, October). *Shaken baby syndrome: An investigator's perspective*. Paper presented at the 9th ISPCAN Asia Pacific Conference on Child Abuse & Neglect, New Delhi, India.
- Smith, H. E. (Ed.). (1989). *Transnational crime: Investigative responses* (3rd ed.). Chicago, IL: Office of International Criminal Justice, University of Illinois.
- Smith, K., & Tilney, S. (2007). *Vulnerable adult and child witnesses*. Oxford: Oxford University Press.
- Sokais, V. (2014, April). Are we too lenient on child sexual assault offenders? *New South Wales Police News*, 94(4), 16-19.
- Song, C. M. (2011). *DNA collection and testing: Background and issues*. New York: Nova Publishers.
- Sporer, S. L., & Martschuk, N. (2014). The reliability of eyewitness identifications by the elderly. In M. P. Toglia, D. F. Ross, J. Pozzulo, & E. Pica (Eds.), *The elderly eyewitness in court* (pp. 3-37). New York: Psychology Press.
- Staples, R. (2011). White power, black crime, and racial politics. *The Black Scholar*, 41(4), 31-41.
- Stelfox, P. (2006). *The factors that determine outcomes in the police investigation of homicide* (Doctoral dissertation, Open University, United Kingdom).
- Stephenson, G. M., & Moston, S. J. (1993). Attitudes and assumptions of police officers when questioning criminal suspects. *Issues in Criminological & Legal Psychology*, 18, 30-36.
- Strategic targeting and prioritization: A pro-active approach to targeting criminal activity. (2002). *Intersec: The Journal of International Security*, 12(5), 161-163.
- Stroud, C. (1987). *Close pursuit: A week in the life of an NYPD homicide cop*. London: Penguin.
- Sukul, B., Deb, U., & Ghosh, S. (2010). Why a "dental surgeon" for identification in forensic science? *Journal of The Indian Medical Association*, 108(11), 769-770, 775.
- Tape recordings. (1978, April). In *Conference of Commissioners of Police of Australasia and South Pacific Region: Record of proceedings* (pp. 302-307). Sydney, Australia: Commissioners of Police of Australasia and South Pacific Region.
- Taylor-Greene, H. E. (1988). *The effects of police systems and their environments on police homicides: An exploratory analysis* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global (UMI No. UMI No. 8912358).
- Tehee, M. P., Andrew B. B., & Connie J. A. (2013, July/August). *Divorcing couples interactions with intimate partner abuse and law enforcement*. Paper presented at the American Psychological Association Convention, Honolulu, HI.
- Tembo, E. B. (2011). *Assessing British and American counter-terrorism: Intelligence, law enforcement and military force (2006-2009)* (Doctoral dissertation, University of Sheffield, Sheffield, United Kindom).
- Thacker, D. (2009, November). *Deciding whether to tell: Women's experiences after arrest for intimate partner violence*. Paper presented at the American Society of Criminology Annual Meeting, Philadelphia, PA.
- The serious business of tackling organised crime. (2014). *Blueprint Journal*, 1(3), 6-9.

- Thetela, P., Hanong E., Sibonile E., & Sunderland, J. (2013). Sex discourses and the construction of gender identity in Sesotho: A case study of police interviews of rape/sexual assault victims. In L. L. Atanga, S. E. Ellece, L. Litosseliti, & J. Sunderland (Eds.), *Gender and language in Sub-Saharan Africa: Tradition, struggle and change* (pp. 205-215). Amsterdam, The Netherlands: John Benjamins Publishing Company
- Tullett, T. (1981). *Strictly murder: Famous cases of Scotland Yard's Murder Squad*. London: Granada.
- van Eys, P., & Beneke, B. (2012). Navigating the system: The complexities of the multidisciplinary team in cases of child sexual abuse. In P. Goodyear-Brown (Ed.), *Handbook of child sexual abuse: Identification assessment and treatment* (pp. 71-97). Hoboken, NJ: John Wiley & Sons.
- Veillard-Cybulska, H. (1976). Interviewers, interviewees and procedures: The human and material aspects of the questioning of children and adolescents. *International Child Welfare Review*, 30, 69-83.
- Vito, G. F., & Wilson, D. G. (1985). *The American juvenile justice system*. Beverly Hills, CA: Sage Publications.
- Vredenburg, J. (2013). *Motorcars and magic highways: The automobile and communication in twentieth-century American literature and film* (Doctoral dissertation, University of Illinois at Urbana-Champaign, Champaign, IL).
- Vrij, A., & Winkel, F. W. (1993). Objective and subjective indicators of deception. In N. K. Clark & G. M. Stephenson (Eds.), *Children, evidence and procedure: Issues in Criminological and Legal Psychology* (pp. 51-57). Leicester, United Kingdom: British P
- Ward, J., & Malinowski, S. (1992). Crime database aids multi-agency investigations. *CJ The Americas*, 5(1), 1-18.
- Ward-Jouve, N. (1986). *"The Streetcleaner": The Yorkshire Ripper case on trial*. London: Marion Boyars.
- Warren, N. (2006). Who do you trust? *Australian Police Journal*, 60(4), 208-217.
- Weber, S. (2014). *Action on alcohol-fuelled violence*. Australia: Australian Institute of Criminology.
- Western Australia Department of the Attorney General (2009). *A review of the Indigenous Justice Taskforce*. Perth: Author.
- Weston, P. B., & Wells, K. M. (1971). *Elements of criminal investigation*. Englewood Cliffs, NJ: PrenticeHall.
- Wheeler, P. L., & McDonagh, M. (2002). *The police investigation of shaken baby syndrome murders and assaults in the United Kingdom*. London: Home Office.
- White, P. (2004). Intelligence and human sources: The strategic fit. *Journal of the Australian Institute of Professional Intelligence Officers*, 13(1), 4-18.
- Whitehead, J., & Lab, S. (2013). *Juvenile justice*. Philadelphia: Elsevier Inc.
- Whitehead, J.T. & Lab, S.P. (2013). Policing and juveniles. In J. T. Whitehead & S. P. Lab (Eds.), *Juvenile justice* (7th ed., pp. 159-190). Boston: Anderson Publishing Ltd.
- Whitehouse, J. E. (1982). *A research guide for law enforcement and the criminal justice system: A bibliography of bibliographies, journals, research, and reference materials*. Palo Alto, CA: R & E Research Associates.

- Williams, B. (2013). Possessed by the Devil. *Australian Police Journal*, 67(4), 166-174.
- Williams, G. T., & Moorman, C. B. (1990). A decade of peace officers murdered in California: The 1980s. *Journal of California Law Enforcement*, 24(1), 1-18.
- Williams, J., & Rodeheaver, D. G. (1991). Processing of criminal homicide cases in a large southern city. *Sociology and Social Research*, 75(2), 80-88.
- Williams, M. (2013, July). Body of Evidence. *Jet*, 122(11), 10.
- Williams, R., & Johnson, P. (2008). *Genetic policing: The uses of DNA in police investigations*. Collumpton, United Kingdom: Willan Publishing.
- Winterdyk, J. (1988). Canadian police officers and eyewitness evidence: A time for reform. *Canadian Police College Journal*, 12(3), 175-191.
- Wogalter, M. S., Malpass, R. S., & Burger, M. A. (1993). *How police officers construct lineups: A national survey*. Proceedings of the Human Factors and Ergonomics Society Annual Meeting, 37(9), 640-644.
- Woodhouse, M. (1997). Intelligence driven policing: A UK model. *Australian Police Journal*, 51(4), 203-210.
- Yarmey, A. D., & Jones, H. T. (1982). Police awareness of the fallibility of eyewitness identification. *Canadian Police College Journal*, 6(2), 113-124.
- Yeschke, C. L. (1997). *The art of investigative interviewing: A human approach to testimonial evidence*. Boston: Oxford.
- Yeung, K. C. (1989). *Overseas research into Asian organized crime*. Victoria: Author.
- Young, W., & Cameron, N. (Eds.). (1989). *Effectiveness and change in policing* (Institute of Criminology Study Series No. 3). Wellington, New Zealand: Institute of Criminology, Victoria University of Wellington.
- You've got the wrong man. (2004). *Law Enforcement News*, 30(619), 8.
- Zavareh, D. K., Bigdeli, M., Mohammadi, R., Khaneh, H. R., Laflamme, L., Bikmoradi, A., & Haglund, B. J. A. (2011). The requirements and challenges in preventing of road traffic injury in Iran: a qualitative study [IP Safety 2010 abstracts]. *Injury Prevention*, 16(Suppl. 1), A53-A54.
- Zeidler, P. C. (1981). *The police, the environment and crime: An empirical analysis* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global database. (UMI No. 8202156).
- Zinn, R. J. (2008). *Incarcerated perpetrators of house robbery as a source of crime intelligence* (Doctoral dissertation, University of South Africa, South Africa).

### References in Denning et al.'s (2009) that were not locatable

- Author unknown. (1996). *Qualities of police action: Contributions to qualitative police research*. Opladen, Germany: Westdeutscher Verlag, 340.
- Author unknown. (1997). *Organised crime*. Wiesbaden, GER: [s.n.], 340.
- Author unknown. (1998). *Determination of time of death of fresh corpses*. Villingen-Schwenningen, GER: Fachhochschule Villingen-Schwenningen Hochschule fuer Polizei.



- Author unknown. (1998, March). *Policing in the new millennium. Problems for the analyst: The international perspective*. Paper presented at the inaugural International Conference for Criminal Intelligence Analysts, Manchester, United Kingdom.
- Woods, A. J., & Jenkinson, R. E. (1991). *Intelligence and operational systems HOLMES front end demonstrator evaluation report*. London, UK: Home Office.
- Winkel, F. W., Vrij, A., Koppelaar, L., & Van der Steen, J. (1991). Reducing secondary victimisation risks and skilled police intervention: Enhancing the quality of police-rape victim encounters through training programmes. *Journal of Police and Criminal Psychology*, 7(2), 2-11.