



# Addressing the inconsistencies in fear of crime research: A meta-analytic review



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## ABSTRACT

**Purpose:** A great deal of research has been conducted on the fear of crime (FOC) to date. Despite this attention, there are a wide range of equivocal results in determining the segment of the population most likely to be afraid. **Methods:** A meta-analysis was conducted using 114 studies in order to gauge a quantitative relationship between FOC and several demographic variables at both the individual (e.g., race, gender) and neighbourhood (i.e., the presence of incivilities, collective efficacy) level. The current analysis resulted in 572 effect sizes.

**Results:** The results show that 8 of the 12 selected demographic characteristics significantly predicted FOC.

**Conclusions:** While data identifying the most fearful segments of the population are generally robust, a moderator variable analysis revealed several elements in the design of individual studies significantly impact the trends they observe, particularly the way FOC is measured and the phrasing of FOC questionnaires.

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## 1. Introduction

Fear of crime (FOC) is a complex construct that is used to describe a range of both psychological and social reactions to perceived threats of crime and/or victimization. Much of its complexity lies in the evidence that the vast majority of people's fears are unrelated to their actual risk of victimization (Hale, 1996; Sacco, 2005; Warr, 2000). This is because perceptions are what drive the FOC, rather than objective measures of risk (Brunton Smith, 2011; Brunton-Smith, Jackson, & Sutherland, 2014). Although some data indicate that FOC has been in decline in the US for the last 20 years (e.g., Gallup, 2016), it remains a significant problem (Ferraro, 1996; Warr, 2000) and a large percentage of people throughout North America and Europe experience some degree of fear on a regular basis (see Ditton & Farrall, 2000; Hale, 1996). Thus, FOC remains a powerful determinant of behaviour that has the potential to affect every individual at some level.

However throughout the literature, there remains a wide range of equivocal results with regard to who is most likely to be afraid, who they are afraid of, and why (Ferraro & LaGrange, 1987; Lee, 2007; Pain, 2000, 2001). For example, some studies conclude that women on average have a greater FOC than men (e.g., Hilinski et al., 2011; Taylor et al., 2009; Warr, 1993), whereas others report that men have a greater FOC (e.g., Sutton & Farrall, 2005) or, that men and women have equivalent FOC levels (e.g., Gilchrist et al., 1998). The literature on a respondent's race, the local racial composition of their community, and FOC contain similar mixed results (e.g., Allan, 2002; Chiricos,

Hogan, & Gertz, 1997; Covington & Taylor, 1991; Liska, Lawrence, & Sanchirico, 1982; Moeller, 1989; Skogan, 1995; Smith, 1984). A thorough survey of the literature show comparable variation in the data surrounding nearly any question concerning who is most likely to be afraid of crime.

There are many potential reasons for the inconsistencies, and largely related to how FOC is measured. Ferraro and LaGrange's (1987, p. 70) seminal paper outlines this problem, stating that "... measurement is the basis of all science. Measurement problems beset a wide variety of research issues and hinder the process of a cumulative development of scientific knowledge. Fear of crime is one of these areas...." Foremost, FOC as a construct is very difficult to operationalize, and as a result almost every researcher has defined and/or theorized it differently, which will shape the direction of the study (Hale, 1996; Pain, 2001). Throughout the literature this is mainly due to the way in which individual researchers attempt to distinguish FOC from risk and/or vulnerability. Often, FOC and perceived risk of victimization are used synonymously. Although both perceived risk and fear are types of crime perceptions, fear is an emotion while perceived risk is a judgment. Ferraro and LaGrange (1987, p. 73) state that "fear, as an emotional reaction, is both an effect and a cause in its relationship to judgments of risk. Fear is influenced by judgments of risk, but also affects such judgments." To complicate matters, some studies have treated these two constructs as separate issues (e.g., Keane, 1998; Roundtree & Land, 1996), while others have treated them as having a reciprocal relationship (e.g., Jackson, 2006; Rader, 2004; Smith & Torstensson, 1997).

In addition, other studies have looked to factors beyond the individual indicative of social capital, typically at the level of the local neighbourhood, and the role it plays in binding together perceptions of risk and

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FOC. Physical incivilities (i.e., signs of social disorder such as litter, graffiti, and abandoned buildings) have been shown to correlate with local FOC (Covington & Taylor, 1991; Taylor & Covington, 1993). Likewise, collective efficacy, which can be broadly define as the ability of "... neighborhoods to realize the common values of residents and maintain effective social controls" (Sampson et al., 1997, p. 919) has also been linked to both FOC and perceptions of risk (e.g., Gainey et al., 2011; Sampson et al., 1997; Weisburd et al., 2010).

These differences in theoretical framework often translate into concrete differences in research protocol. For example, studies that distinguish between the cognitive assessment of the risk of being victimized and the affective state of fear (e.g., Cossman & Rader, 2011; Killias, 1990) often phrased their questions in order to explicitly capture these distinctions. Such studies typically ask questions relating to prior victimization experience (Ferarro, 1996) and/or perceived vulnerability (Skogan & Maxfield, 1981) rather than about FOC per se. In addition to changes in the wording of questions, difference can be found in the measurement of the construct. For instance, some studies have used a binary yes/no forced choice, while others allow participants to rank their fear on a continuum. Questions in any of these forms can then be asked about fear of crime in general, about one or more specific crimes (e.g., mugging), and/or in one or more specific circumstances (e.g., while walking alone at night). Moreover, some studies use standardized questionnaires administered on a wide, often national scale (e.g., Meyer and Grollman, 2014), while others use more custom surveys on geographically restricted populations (e.g., Weinrath et al., 2007). It is possible for any of these methodological differences to affect the results that are obtained, a hypothesis that has often been stated, but under-researched (Alper and Chappell, 2012; Cops et al., 2012; Farrall et al., 2000; Ferraro & LaGrange, 1987; Hale, 1996; Roundtree & Land, 1996).

Addressing this question requires the synthesis of the empirical knowledge regarding FOC using meta-analysis (Lipsey & Wilson, 2001). Through such an analysis, it is possible to summarize a profile of who, on average, is the most fearful segment of the population through common patterns in the literature. Moreover, this technique can determine through moderator variable analysis the impact of a particular researcher's methodology on that profile.

## 2. Methods

A meta-analysis is a quantitative synthesis of existing research studies. It can be defined as a "...application of statistical procedures to collections of empirical findings for the purpose of integrating, synthesizing, and making sense of them" (Niemi, 1986, p. 5). The current study conducted a meta-analysis using published techniques (Lipsey & Wilson, 2001; Collins, 2010). The main statistic presented in a meta-analysis is an effect size (ES), which provides a standardized measurement of the strength of the relationship between an independent and dependent variable across the sample of studies (Cohen, 1988).

### 2.1. Selection criteria

Articles were collected from: socINDEX; psycINFO, Sociological Abstracts; ProQuest; Social Science Citation Index; NCJRS; JSTOR; PubMed; Dissertation Abstracts International; and Google Scholar from studies conducted between 1970 and 2014. The keywords used in the database search included "fear of crime"; "perceived safety" and "fear of victimization", both alone and in combination with: "age"; "gender"; "women"; "men"; "quantitative"; and "measure(s)." Studies were included provide they (a) included measures of fear of crime (b) compared these responses to these measures across demographic groups (e.g., age, race, gender), (c) were original studies written in English, and (d) included sufficient statistics to calculate an effect size (ES). In addition, the references of all included articles were searched for additional studies.

### 2.2. Data recorded from each study

The first set of ESs was developed from contrasts based on pairwise comparisons. *White* participants were compared against all other racial groups. A similar comparison was conducted for Hispanics and Blacks, when these data were available. *Women's* fear of crime was compared to men, and fear of crime among those with *previous victimization* was compared against those without prior victimization. Comparisons were also made across groupings for which discrete categories were not always used. In these cases, ESs were calculated from either standardized beta coefficients or bivariate correlations. The contrasts compared fear of crime among individuals with differing levels of *education*, perception of *incivilities* ratings of *police satisfaction* and *collective efficacy*, as well as measures of relative *disadvantage* (broadly defined, although typically based on SES) and *crime rate* of the community in which the respondent lived.

### 2.3. Effect size calculation

If the research paper met the preceding criteria, Cohen's *d* statistic (Cohen, 1988) was derived for each comparison from means and standard deviations whenever they were present, or from arithmetic equivalencies to other statistical tests (e.g., *t*, *F*,  $\chi^2$ , or from  $\beta$  coefficients and standard error terms in regression analyses) according to published formulae (Wolf, 1986; Lipsey & Wilson, 2001). All ESs were calculated using the effect size calculator, created by D. B. Wilson (available at <http://cebcp.org/practical-meta-analysis-effect-size-calculator>). After computing ESs, a weighted combined ES was obtained (Lipsey & Wilson, 2001; Rosenthal, 1991) to indicate the magnitude of the association observed across all studies. More specifically, ESs were weighted by the inverse variance (Lipsey & Wilson, 2001) in order to correct for sampling error by incorporating the variance as a direct index of ES precision. The mean weighted ES was estimated using a maximum-likelihood random effects model (Lipsey & Wilson, 2001).

Similar to other meta-analyses conducted in criminology (e.g., Baier & Wright, 2001; Paternoster, 1987; Pratt & Cullen, 2005; Pratt et al., 2014), the current analysis includes both bivariate and multivariate ES estimates. Each of these types of estimates has different shortcomings. While bivariate ESs may be inflated by partial spuriousness, multivariate ESs may vary according to the model specification in a particular study. One strategy to assess potential bias that may be introduced by combining ESs derived from these different sources is to statistically analyze whether the effects of the included variables vary in magnitude depending on the analysis type (see Pratt et al., 2014). The results of this analysis are shown in Table 2.

### 2.4. Moderator variable analysis

For each set of ESs, a homogeneity statistic (*Q*) was calculated to assess the heterogeneity of results across studies (Lipsey & Wilson, 2001; Rosenthal & DiMatteo, 2001). When significant, this homogeneity statistic indicates that the observed variance in study ES is significantly greater than would be expected by chance if sampling a single population. If significant heterogeneity was found, a moderator analysis was performed to investigate potential moderating factors (Lipsey & Wilson, 2001; Rosenthal & DiMatteo, 2001). This analysis consisted of an inverse-variance weighted least-squares regression. The moderator variables examined in this study were as follows:

#### 2.4.1. Country

The country in which the study was conducted was recorded, dummy-coded in six categories: Canada, USA, Australia, UK, Europe, and other.

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