



Contents lists available at ScienceDirect

# Personality and Individual Differences

journal homepage: [www.elsevier.com/locate/paid](http://www.elsevier.com/locate/paid)

## The protective role of higher intellectual functioning on violence in the household population of Great Britain



Rafael A. González\*, Constantinos Kallis, Simone Ullrich, Tian Zhang, Jeremy W. Coid

Queen Mary University of London, Barts and The London School of Medicine and Dentistry, Wolfson Institute of Preventive Medicine, Forensic Psychiatry Research Unit, United Kingdom

### ARTICLE INFO

#### Article history:

Received 14 August 2013

Received in revised form 2 January 2014

Accepted 7 January 2014

Available online 7 February 2014

#### Keywords:

Intelligence

Self-reported violence

Social class

Effect moderation

General population

### ABSTRACT

Despite compelling evidence of the effect of intelligence on delinquency and violent crime, there is limited data on its impact on population violence. We aimed to determine the association of categories of intelligence with violent behaviors in the general population and the extent of the impact of social class on these associations. A randomly selected sample of 14,738 individuals was derived from 2 British national surveys of adults aged 16 years and older. We measured self-reported violent behavior in the past 5 years, including: repetition, injury, violence while intoxicated, familial and extra-familial victim types and intimate partner violence. We examined the moderating role of social class on all outcomes. The increased risk of violence among persons of below average IQ was explained by social class at population level. High IQ had an overall protective effect on all outcomes except violence towards family members, irrespective of socio-economic circumstances. Social class moderated the association of IQ with violence by decreasing its protective effect among those in the lowest socio-economic positions. Our findings suggest that the association of IQ and violence is not linear but protective on population level. Social class has both an explaining and a moderating role in this association.

© 2014 Elsevier Ltd. All rights reserved.

### 1. Introduction

Violence is a leading cause of death worldwide due to injuries (Lopez, Mathers, Ezzati, Jamison, & Murray, 2006) and is increasingly recognized as a public health concern requiring intervention (Sleet et al., 2012). It is therefore essential to understand predictors of violence through population-wide studies. Intelligence (IQ) and cognitive functioning are inversely associated with increased rates of population morbidity and mortality (Martin & Kubzansky, 2005), and an extensive body of research has consistently linked low IQ and intellectual disability with delinquency and serious crime (Frisell, Pawitan, & Langstrom, 2012; Hodgins, 1992). More recently, verbal IQ has been found to be associated with frequent (Barker et al., 2007) and interpersonal violence (Theobald & Farrington, 2012).

The association between low intelligence (IQ) and violent crime and delinquency is generally considered robust (Lynam, Moffitt, & Stouthamer-Loeber, 1993; Simonoff et al., 2004), and not fully explained by differential detection of offenders of lower intelligence (Moffitt & Silva, 1988) or socio-demographic factors (Frisell et al., 2012; Lynam et al., 1993; Moffitt & Silva, 1988). Previous findings indicate that the impact of low IQ on violent offending is direct and

independent of socioeconomic status (SES) (Frisell et al., 2012; Moffitt, Gabrielli, Mednick, & Schulsinger, 1981). However, it remains unclear to what extent social class may have a moderating effect on IQ in predicting violence and related adverse outcomes. Furthermore, an alternative hypothesis suggested that high intelligence may have a protective effect in at risk individuals engaging in antisocial behaviors (Kandel et al., 1988).

Previous studies on the association between IQ and violent crime have several limitations. The majority of reports are based on official criminal records (Frisell et al., 2012; Hodgins, 1992; Kandel et al., 1988; Moffitt & Silva, 1988) or were conducted on samples of convicted offenders (Guay, Ouimet, & Proulx, 2005; Kandel et al., 1988). Since a significant proportion of violent incidents do not result in conviction, there is a gap in population-based studies investigating this association between IQ and violence in the community, especially amongst adults. Furthermore, some of the previous studies did not adjust for the effects of essential confounders such as ethnicity, SES, gender or employment simultaneously (Guay et al., 2005; Hodgins, 1992; Theobald & Farrington, 2012; Walsh, Swogger, & Kosson, 2004). Finally, no previous studies have examined differential effects of the IQ standard classification commonly used in clinical practice. Using categories of IQ in relation to violence and antisocial outcomes is particularly relevant since recent findings suggest that this association may not be linear (Levine,

\* Corresponding author. Tel.: +44 7799672884.

E-mail address: [r.gonzalez@qmul.ac.uk](mailto:r.gonzalez@qmul.ac.uk) (R.A. González).

2008). The present study is well suited to overcome these limitations by making use of two well-characterized survey samples of the adult household population of England, incorporating exhaustive assessments of violent outcomes.

In order to determine the extent to which intelligence contributes to the public health problem of violence in the population, and the role of social class in these associations, we conducted joint analyses of individual-level data from two representative samples of the British adult population in 2000 (Singleton, Bumpstead, & O'Brien, 2001) and 2007 (McManus, Maltzer, Brugha, Bebbington, & Jenkins, 2009). We investigated the association between IQ and violent behavior in the general population to identify: (1) risk and protective effects of the four standard IQ categories, and the continuous IQ score, (2) their direct associations by adjusting for social class and additional demography, and (3) the potentially moderating role of social class on intelligence in association with violent outcomes.

## 2. Method

### 2.1. Participants

The sample was drawn from the first phase of the ONS Survey of Psychiatric Morbidity among Adults in Great Britain (2000) and the Adult Psychiatry Morbidity Survey (2007), two British national surveys of psychiatric morbidity among adults aged 16 years and older living in households in England, Scotland and Wales in 2000, and in England in 2007. A total of 8580 adults completed a first-phase interview (response rate 69.5%) in the 2000 survey and 7403 in 2007 (response rate 57.0%). Design and sampling procedures have previously been described (McManus et al., 2009; Singleton, Bumpstead, & O'Brien, 2001). Of the total sample, 1080 (6.8%) were excluded due to missing data on the IQ measure, and 230 (1.4%) on the violent behaviors module. The total sample under study was 14,738.

### 2.2. Materials

#### 2.2.1. Demographic covariates

Social class was based on the UK Registrar General's Classification (OPCS., 1991) which uses the most recent occupation of the head of household: I – professional, II – managerial, IIIA – skilled manual, IIIB – skilled non-manual, IV – partly skilled, V – unskilled. These were combined in three categories: I & II (upper middle class), III (lower middle and skilled working class) and IV & V (less skilled and unskilled). These classifications have been employed successfully in several previous publications from these data sources (Coid et al., 2006a; Coid, Yang, Tyrer, Roberts, & Ullrich, 2006b). We decided to use this classification because it represents an indicator of income, education, and level of responsibility at work (Elovainio et al., 2011; Stringhini et al., 2012).

Additional socio-demographic covariates included gender, age, marital status and ethnicity.

#### 2.2.2. Violent behavior

Participants were asked whether they had been in a physical fight or deliberately hit anyone in the past 5 years. Subsequent questions collected information on the severity of the violent behavior, including: repetition (5 or more incidents), victim injury, violence when intoxicated (drugs/alcohol) and minor violence (no injuries or police involvement). We also included self-report of intra and extra-familial victim types and intimate partner violence (IPV).

#### 2.2.3. Intellectual functioning (IQ)

Intellectual functioning was estimated using the National Adult Reading Test (NART) (Nelson & Willison, 1991), a proxy measure of pre-morbid IQ that includes 50 words printed in order of

increasing difficulty. These are relatively short to avoid added complexity, and are irregular to prevent correct responses based on word recognition. Originally developed to predict Wechsler Adult Intelligence Scale IQ (WAIS) scores, the NART was subsequently re-standardized to predict WAIS-Revised IQ. Acceptable construct validity (Crawford, Allan, Cochrane, & Parker, 1990) and high correlations with measures of IQ (Crawford, Deary, Starr, & Whalley, 2001) have been consistently reported for the NART. Scores classified participants according to standard IQ categories: above average, average, below average and intellectual disability. The NART scores were transformed following the user's manual into the standard IQ distribution with a mean of 100 (SD 15). Therefore, equal to or below 69 denotes intellectual disability, from 70 to 84 is below average, 85–115 average, and from 116 onwards is high average. These classification cut-offs are consistent with the American Psychiatric Association's (American Psychiatric Association., 2000) diagnostic and statistical manual.

### 2.3. Procedure

#### 2.3.1. Statistical analyses

As each of the surveys employed the same measures of IQ, demography and violence outcomes, we conducted joint analyses of individual-level data. Prior to these analyses the independent main associations of IQ with violence for each survey were meta-analyzed to assess potential heterogeneity (data available from authors). There was no significant heterogeneity between the two surveys regarding the association with each category of IQ in unadjusted or adjusted multivariable models.

Weighted frequencies and proportions were reported for categorical predictors and outcomes. We estimated their impact on violence using logistic regression models with Odds Ratios (OR) as indicators of magnitude of associations.

Average IQ was assigned as reference category in all models against which the remaining categories were contrasted. All models are presented (1) unadjusted, (2) adjusted for social class only, (3) adjusted for social class, sex, age, marital and employment status, and ethnicity to identify direct associations. Demographic variables significantly associated with either predictor (IQ) or outcome (violence) factors were included as confounders in multivariable models.

To test the moderating effect of social class on intellectual functioning when predicting violent outcomes, effect-modification was tested by including interaction terms of IQ X social class in all adjusted models. Since the combination of IQ categories by social class (4 × 3) would have produced numerous estimates for each moderation model, interactions were performed with NART continuous scores and the 3 levels of social class.

To adjust for effects of selecting one individual per household, under-representation of certain subgroups, and to account for any deviation from selecting a simple random sample, probability weights were used. All models employed robust standard errors to adjust for clustering of individuals within postcodes. To control for differences between the two sources of data, survey type was included as a covariate on all analyses.

All analyses were performed using Stata version 12 (StataCorp).

## 3. Results

### 3.1. Demographic characteristics

Participants were distributed among the 4 categories of IQ: above average (3922, 26.6%), average (8639, 58.6%), below average (1900, 12.9%), and intellectual disability (277, 1.9%). Table 1 shows that all demographic characteristics were associated with IQ in

Download English Version:

<https://daneshyari.com/en/article/890539>

Download Persian Version:

<https://daneshyari.com/article/890539>

[Daneshyari.com](https://daneshyari.com)