

Correlates of crime

The **correlates of crime** explore the associations of specific non-criminal factors with specific crimes.

The field of criminology studies the dynamics of crime. Most of these studies use correlational data; that is, they attempt to identify various factors are associated with specific categories of criminal behavior. Such correlational studies led to hypotheses about the causes of these crimes.

The Handbook of Crime Correlates (2009) is a systematic review of 5200 empirical studies on crime that have been published worldwide. A crime consistency score represents the strength of relationships. The scoring depends on how consistently a statistically significant relationship was identified across multiple studies. The authors claim that the review summarizes most of what is currently known about the variables associated with criminality.^[1] Writing in 2019, criminologist Greg Ridgeway argued that criminology was still trying to conclusively determine what causes crime.^[2]

Crime occurs most frequently during the second and third decades of life.

Sex

Males commit more crime overall and more violent crime than females. They commit more property crime except shoplifting, which is about equally distributed between the genders. Males appear to be more likely to reoffend.

Genetics

Serotonin

Lower serotonergic activity in the brain is associated with criminality. Serotonin levels can be estimated by measuring the levels of the metabolite 5-HIAA in the urine; offenders often have lower levels of 5-HIAA. An 5-HTTLPR polymorphism, which lowers serotonin levels, has been found to be associated with criminal behavior. In addition, a lower density of paroxetine binding sites, which is associated with lower levels of serotonin transmission in the brain, is associated with greater criminality.^[1]

Other

In addition, CDH13, a gene previously tied to an increased risk of substance abuse, has been tied to violent crime.^[3] Low cholesterol levels, slow heart rate, DHEA, MHPG, blood glucose, cortisol, testosterone, and blood lead levels, and the ratio of tryptophan to other amino acids in the blood, have all also been connected to criminal behavior. Physical attractiveness has been found to be negatively correlated with criminality.^[1] These tendencies are ostensibly related, as the majority of all individuals who commit severe violent crime in Finland do so under the influence of alcohol or drugs. The presence of the genetic profile is not determinative, although it increases the likelihood of delinquency in cases where other factors are present. Ferguson stated, 'a large percentage of our behaviour in terms of violence or aggression is influenced by our biology - our genes - and our brain anatomy.'^[4] Schnupp stated, 'To call these alleles "genes for violence" would therefore be a massive exaggeration. In combination with many other factors these genes may make it a little harder for you to control violent urges, but they most emphatically do not predetermine you for a life of crime.'^[4]

Race, ethnicity

Research into the relationship between race and crime has grown exponentially in recent years.^[5] More specifically, the research delves into the potential cause and effects of racial disparities in crime. This includes but is not limited to, disadvantages and inequality (racially, socially and economically), disparities in education, employment/unemployment, poverty, social status, and social/familial structure. Also of notable interest, is the role of exposure in childhood to violent behavior, another potential cause of racial disparities in crime.

In some countries, ethnically/racially diverse geographical areas have higher crime rates compared to homogeneous areas, and in other countries, it is the other way around.

Immigration status

While some studies on immigrants found higher rates of crime, this varies with the country of origin. Immigrants from some regions show lower reported crime rates than the native-born population.^[1] Notions about the propensity for immigrants to commit crime vary among geographical regions. Likewise, the propensity for immigrants to commit more or less crime than the native-born population also varies geographically. For instance within the United States, census data shows that immigrants are less likely to be incarcerated for a crime than residents who were born within the United States.^[6] The United States census includes both legal and illegal immigrants, as it counts the total number of people residing in an area regardless of citizenship status.^[7]

Early life

Associated factors include maternal smoking during pregnancy, low birth weight, perinatal trauma/birth complications,^{[1][8]} child maltreatment, low parent-child attachment, marital discord/family discord, alcoholism and drug use in the family, low parental supervision/monitoring, family size and birth order,^[1] nocturnal enuresis or bed wetting, bullying, school disciplinary problems, truancy, low grade point average, dropping out of high school^[1] and childhood lead exposure.^[9]

Adult behavior

Associated factors include high alcohol use, alcohol abuse and alcoholism, high illegal drug use and dependence, early age of first sexual intercourse and the number of sexual partners, social isolation, criminal peer groups and gang membership.^[1]

Religiosity

A few studies have found a negative correlation between religiosity and criminality. A 2001 meta-analysis found, "religious beliefs and behaviors exert a moderate deterrent effect on individuals' criminal behavior", but that "studies have systematically varied in their estimation of the religion-on-crime effect due to differences in both their conceptual and methodological approaches". This suggests that religiosity has been operationalized in varying ways, impacting the results of the findings.^[10] Additionally, 1995 paper stated that "[a]lthough a few researchers have found that religion's influence is noncontingent, most have found support—especially among youths—for effects that vary by denomination, type of offense, and social and/or religious context," suggesting a complex relationship between religiosity and crime. They also "found that, among our religiosity measures, participation in religious activities was a persistent and noncontingent inhibitor of adult crime" when controlling for other factors, such as social ecology and secular constraints.^[11]

An individual with high religious saliency (i.e. expressing the high importance of religion in their life) is less likely to be associated with criminal activities; similarly, an individual who regularly attends religious services or is highly involved in them tends to be less involved in criminality, with the exception of property damage.^{[1]:108} Other meta-analysis research suggests that those who subscribe to more orthodox religious beliefs are less likely to engage in criminal behavior than those who do not.^{[1]:112} A 2012 study suggested that belief in hell decreases crime rates, while belief in heaven increases them, and indicated that these correlations were stronger than other correlates like national wealth or income inequality.^[12]

A 1997 study of six public high schools found no statistically significant negative correlations between religiosity and crime, or religiosity and drug use, and the only relationship between religiosity and alcohol was statistically significant.^[13] A more recent review concludes that there are insufficient data to indicate any correlation between religiosity and crime.^[14] Furthermore, any possible correlations may not apply universally to all relatively nonreligious groups, as there is some evidence self-identified atheists have had significantly lower incarceration rates than the general public in the United States.^[15] Most studies examining correlation to date do not distinguish between different types of low religiosity.

Political ideology

A 2016 study found statistically significant evidence that political ideology is moderately correlated with involvement in non-violent crime, among white individuals and particularly among white women. It suggests that liberal self-classification can, among some groups, be positively associated with non-violent criminal behavior compared to conservative self-classification.^[16]

Psychological traits

Associated factors include childhood conduct disorder, adult antisocial personality disorder (also associated with each other),^{[1][17]} attention deficit hyperactivity disorder (ADHD), minor depression, clinical depression, depression in the family, suicidal tendencies and schizophrenia.^{[1][18]}

The American Psychological Association's 1995 report *Intelligence: Knowns and Unknowns* stated that the correlation between intelligence quotient (IQ) and crime was -0.2. This association is generally regarded as small and prone to disappear or be substantially reduced after controlling for the proper covariates, being much smaller than typical sociological correlates.^[19] In his book *The g Factor: The Science of Mental Ability* (1998), Arthur Jensen cited data which showed that IQ was generally negatively associated with crime among people of all races, peaking between 80 and 90. Learning disability is a substantial discrepancy between IQ and academic performance and is associated with crime. Slow reading development may be particularly relevant.^[1] It has also been shown, however, that the effect of IQ is heavily dependent on socioeconomic status and that it cannot be easily controlled away, with many methodological considerations being at play.^[20] Indeed, there is evidence that the small relationship is mediated by well-being, substance abuse, and other confounding factors that prohibit simple causal interpretation.^[21] A recent meta-analysis has shown that the relationship is only observed in higher risk populations such as those in poverty without direct effect, but without any causal interpretation.^[22] A nationally representative longitudinal study has shown that this relationship is entirely mediated by school performance.^[23]

Several personality traits are associated with criminality: impulsivity, psychoticism, sensation-seeking, low self control, childhood aggression, low empathy and low altruism.^[1]

Socioeconomic factors

Socioeconomic status (usually measured using the three variables income or wealth, occupational level, and years of education) correlates negatively with criminality, except for self-reported illegal drug use. Higher parental socioeconomic status probably has an inverse relationship with crime. Unstable employment and high frequency of unemployment correlate positively with criminality.^{[1][24]} Low socioeconomic status is thought to be positively correlated with higher levels of stress, and therefore the mental and psychological ill-effects of stress.^[25] Indeed, higher stress levels have been positively associated with a propensity to commit crime.^[26]

Somewhat inconsistent evidence indicates a positive relationship between low income levels, the percentage of population under the poverty line, low education levels, and high income inequality in an area with more crime in said area.^[1] A 2013 study from Sweden argued that there was little effect of neighbourhood deprivation on criminality per se and rather that the higher rates of crime were due to observed and unobserved family and individual level factors, indicating that high-risk individuals were being selected into economically deprived areas.^[27]

A World Bank study said, "Crime rates and inequality are positively correlated within countries and, particularly, between countries, and this correlation reflects causation from inequality to crime rates, even after controlling for other crime determinants."^[28]

Researchers in criminology have argued the effect of poverty upon crime is contextual:^{[29][30][31]}

As Levi (1997: 860) noted, macrolevel accounts 'seldom generate anything close to a causal account which makes sense of nonviolence as well as of violence'. Put another way, the vast majority of individuals who live in conditions of poverty or disadvantage do not resort to violence at any time. Hence, in order to understand the patterns of violence that actually occur, it is imperative to study the social experiences of those who engage in it (Athens 1992).

Geographic factors

Associated factors include areas with population size, neighborhood quality, residential mobility, tavern and alcohol density, gambling and tourist density, proximity to the equator,^[1] temperature (weather and season). The higher crime rate in the southern US largely disappears after controlling for non-climatic factors.^[32]

Parent–child relationships

Children whose parents did not want children are more likely to commit crimes. Such children are less likely to succeed in school, and are more likely to live in poverty.^[8] They tend to have lower mother–child relationship quality.^[33]

Biosocial criminology and other analysis of environmental factors

Biosocial criminology is an interdisciplinary field that aims to explain crime and antisocial behavior by exploring both biological factors and environmental factors. While contemporary criminology has been dominated by sociological theories, biosocial criminology also recognizes the potential contributions of fields such as genetics, neuropsychology and evolutionary psychology.^[34]

Aggressive behavior has been associated with abnormalities in three principal regulatory systems in the body:

- serotonin systems,

- catecholamine systems,
- and the hypothalamic-pituitary-adrenocortical axis.

Abnormalities in these systems also are known to be induced by stress, either severe, acute stress or chronic low-grade stress.^[35]

In environmental terms, the theory that crime rates and lead exposure are connected, with increases in the latter causing increases in the former, has attracted much scientific analysis. In 2011, a report published by the official United Nations News Centre remarked, "Ridding the world of leaded petrol, with the United Nations leading the effort in developing countries, has resulted in \$2.4 trillion in annual benefits, 1.2 million fewer premature deaths, higher overall intelligence and 58 million fewer crimes". The California State University did the specific study. Then U.N. Environment Programme (UNEP) executive director Achim Steiner argued, "Although this global effort has often flown below the radar of media and global leaders, it is clear that the elimination of leaded petrol is an immense achievement on par with the global elimination of major deadly diseases."^[36]

See also

- Causes of sexual violence
- Causality
- Crime statistics
- Criminology
 - Biosocial criminology
 - Environmental criminology
 - Lead and crime hypothesis
- Dark figure of crime



References

1. Ellis, Beaver & Wright 2009.
2. Ridgeway, Greg (2019). "Experiments in Criminology: Improving Our Understanding of Crime and the Criminal Justice System". *Annual Review of Statistics and Its Application*. **6**: 37–61. doi:10.1146/annurev-statistics-030718-105057 (<https://doi.org/10.1146%2Fannurev-statistics-030718-105057>). S2CID 158290235 (<https://api.semanticscholar.org/CorpusID:158290235>).
3. Tiihonen, J; Rautiainen, M-R; Ollila, H M; Repo-Tiihonen, E; Virkkunen, M; Palotie, A; Pietiläinen, O; Kristiansson, K; Joukamaa, M; Lauerma, H; Saarela, J; Tyni, S; Vartiainen, H; Paananen, J; Goldman, D; Paunio, T (June 2015). "Genetic background of extreme violent behavior" (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4776744>). *Molecular Psychiatry*. **20** (6): 786–792. doi:10.1038/mp.2014.130 (<https://doi.org/10.1038%2Fmp.2014.130>). PMC 4776744 (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4776744>). PMID 25349169 (<https://pubmed.ncbi.nlm.nih.gov/25349169>).
4. Hogenboom, Melissa (28 October 2014). "Two genes linked with violent crime" (<https://www.bbc.com/news/science-environment-29760212>). *BBC News*.
5. Piquero, Alex R.; Brame, Robert W. (2008-07-01). "Assessing the Race–Crime and Ethnicity–Crime Relationship in a Sample of Serious Adolescent Delinquents" (<https://doi.org/10.1177/0011128707307219>). *Crime & Delinquency*. **54** (3): 390–422. doi:10.1177/0011128707307219 (<https://doi.org/10.1177%2F0011128707307219>). ISSN 0011-1287 (<https://search.worldcat.org/issn/0011-1287>). PMC 2782848 (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2782848>). PMID 19946564 (<https://pubmed.ncbi.nlm.nih.gov/19946564>).
6. "Immigrants less likely to commit crimes than those born in the US" (<https://www.independent.co.uk/news/world/americas/immigrants-commit-crimes-us-united-states-born-america-donald-trump-alien-weekly-list-a7548956.html>). *The Independent*. 2017-01-27. Archived (<https://ghostarchive.org/archive/20220524/http://www.independent.co.uk/news/world/americas/immigrants-commit-crimes-us-united-states-born-america-donald-trump-alien-weekly-list-a7548956.html>) from the original on 2022-05-24. Retrieved 2017-03-06.
7. "Congressional Apportionment - Frequently Asked Questions" (<https://www.census.gov/population/apportionment/about/faq.html>). Retrieved November 13, 2019.

8. Monea, Emily; Thomas-Adam (June 2011). "Unintended Pregnancy and Taxpayer Spending". *Perspectives on Sexual and Reproductive Health*. **43** (2): 88–93. doi:10.1363/4308811 (<https://doi.org/10.1363%2F4308811>). PMID 21651707 (<https://pubmed.ncbi.nlm.nih.gov/21651707>).
9. "Sick Kids Are Just the Beginning of America's Lead Crisis" (<https://www.motherjones.com/environment/2013/01/lead-crime-link-gasoline?page=1>). *Mother Jones*. Retrieved 2017-03-06.
10. Baier, Colin J.; Wright, Bradley R. E. (February 2001). "'If You Love Me, Keep My Commandments': A Meta-Analysis of the Effect of Religion on Crime". *Journal of Research in Crime and Delinquency*. **38** (1): 3–21. doi:10.1177/0022427801038001001 (<https://doi.org/10.1177%2F0022427801038001001>). S2CID 145779667 (<https://api.semanticscholar.org/CorpusID:145779667>).
11. Evans, T. David; Cullen, Francis T.; Dunaway, R. Gregory; Burton, Velmer S. (May 1995). "Religion and Crime Reexamined: The Impact of Religion, Secular Controls, and Social Ecology on Adult Criminality". *Criminology*. **33** (2): 195–224. doi:10.1111/j.1745-9125.1995.tb01176.x (<https://doi.org/10.1111%2Fj.1745-9125.1995.tb01176.x>).
12. Shariff, Azim F.; Rhemtulla, Mijke (18 June 2012). "Divergent Effects of Beliefs in Heaven and Hell on National Crime Rates" (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3377603>). *PLOS ONE*. **7** (6) e39048. Bibcode:2012PLoSO...739048S (<https://ui.adsabs.harvard.edu/abs/2012PLoSO...739048S>). doi:10.1371/journal.pone.0039048 (<https://doi.org/10.1371%2Fjournal.pone.0039048>). PMC 3377603 (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3377603>). PMID 22723927 (<https://pubmed.ncbi.nlm.nih.gov/22723927>).
13. Benda, Brent B. (May 1997). "An Examination of a Reciprocal Relationship Between Religiosity and Different Forms of Delinquency Within a Theoretical Model". *Journal of Research in Crime and Delinquency*. **34** (2): 163–186. doi:10.1177/0022427897034002001 (<https://doi.org/10.1177%2F0022427897034002001>). S2CID 146674490 (<https://api.semanticscholar.org/CorpusID:146674490>).
14. Zuckerman, Phil (December 2009). "Atheism, Secularity, and Well-Being: How the Findings of Social Science Counter Negative Stereotypes and Assumptions". *Sociology Compass*. **3** (6): 949–971. doi:10.1111/j.1751-9020.2009.00247.x (<https://doi.org/10.1111%2Fj.1751-9020.2009.00247.x>).
15. "Prison Incarceration and Religious Preference" (https://web.archive.org/web/20001212040800/http://www.adherents.com/misc/adh_prison.html#altformat). Archived from the original on December 12, 2000.
16. Wright, John Paul; Beaver, Kevin M.; Morgan, Mark Alden; Connolly, Eric J. (February 2017). "Political ideology predicts involvement in crime". *Personality and Individual Differences*. **106**: 236–241. doi:10.1016/j.paid.2016.10.062 (<https://doi.org/10.1016%2Fj.paid.2016.10.062>).
17. Wilson, James Q.; Petersilia, Joan (2002). *Crime: public policies for crime control* (<https://books.google.com/books?id=DJfaAAAAMAAJ>). ICS Press. ISBN 978-1-55815-509-1.
18. Fazel, Seena; Grann, Martin (August 2006). "The Population Impact of Severe Mental Illness on Violent Crime" (<https://doi.org/10.1176%2Fajp.2006.163.8.1397>). *American Journal of Psychiatry*. **163** (8): 1397–1403. doi:10.1176/ajp.2006.163.8.1397 (<https://doi.org/10.1176%2Fajp.2006.163.8.1397>). PMID 16877653 (<https://pubmed.ncbi.nlm.nih.gov/16877653>). S2CID 23042885 (<https://api.semanticscholar.org/CorpusID:23042885>).
19. Cullen, Francis T.; Gendreau, Paul; Jarjoura, G. Roger; Wright, John Paul (October 1997). "Crime and the Bell Curve: Lessons from Intelligent Criminology". *Crime & Delinquency*. **43** (4): 387–411. doi:10.1177/0011128797043004001 (<https://doi.org/10.1177%2F0011128797043004001>). S2CID 145418972 (<https://api.semanticscholar.org/CorpusID:145418972>).
20. Mears, Daniel P.; Cochran, Joshua C. (November 2013). "What is the effect of IQ on offending?". *Criminal Justice and Behavior*. **40** (11): 1280–1300. doi:10.1177/0093854813485736 (<https://doi.org/10.1177%2F0093854813485736>). S2CID 147219554 (<https://api.semanticscholar.org/CorpusID:147219554>).
21. Freeman, James (January 2012). "The relationship between lower intelligence, crime and custodial outcomes: a brief literary review of a vulnerable group" (<https://doi.org/10.3402%2Fvgi.v3i0.14834>). *Vulnerable Groups & Inclusion*. **3** (1) 14834. doi:10.3402/vgi.v3i0.14834 (<https://doi.org/10.3402%2Fvgi.v3i0.14834>). S2CID 145305072 (<https://api.semanticscholar.org/CorpusID:145305072>).
22. Ttofi, Maria M.; Farrington, David P.; Piquero, Alex R.; Lösel, Friedrich; DeLisi, Matthew; Murray, Joseph (1 June 2016). "Intelligence as a protective factor against offending: A meta-analytic review of prospective longitudinal studies". *Journal of Criminal Justice*. **45**: 4–18. doi:10.1016/j.jcrimjus.2016.02.003 (<https://doi.org/10.1016%2Fj.jcrimjus.2016.02.003>).
23. McGloin, Jean Marie; Pratt, Travis C.; Maahs, Jeff (1 September 2004). "Rethinking the IQ-delinquency relationship: A longitudinal analysis of multiple theoretical models". *Justice Quarterly*. **21** (3): 603–635. doi:10.1080/07418820400095921 (<https://doi.org/10.1080%2F07418820400095921>). S2CID 143305924 (<https://api.semanticscholar.org/CorpusID:143305924>).

24. Morgan (22 May 2010). "Why do Celebrities get away with Crimes?" (<http://www.knowswwhy.com/why-do-celebrities-get-away-with-crimes/>). *www.knowswwhy.com*. Retrieved 2017-03-06.
25. Baum, Andrew; Garofalo, J. P.; Yali, Ann Marie (December 1999). "Socioeconomic Status and Chronic Stress: Does Stress Account for SES Effects on Health?". *Annals of the New York Academy of Sciences*. **896** (1): 131–144. Bibcode:1999NYASA.896..131B (<https://ui.adsabs.harvard.edu/abs/1999NYASA.896..131B>). doi:10.1111/j.1749-6632.1999.tb08111.x (<https://doi.org/10.1111%2Fj.1749-6632.1999.tb08111.x>). PMID 10681894 (<https://pubmed.ncbi.nlm.nih.gov/10681894>). S2CID 41519491 (<https://api.semanticscholar.org/CorpusID:41519491>).
26. Felson, Richard B.; Osgood, D. Wayne; Horney, Julie; Wiernik, Craig (2012-06-01). "Having a Bad Month: General Versus Specific Effects of Stress on Crime" (<https://link.springer.com/article/10.1007/s10940-011-9138-6>). *Journal of Quantitative Criminology*. **28** (2): 347–363. doi:10.1007/s10940-011-9138-6 (<https://doi.org/10.1007%2Fs10940-011-9138-6>). ISSN 1573-7799 (<https://search.worldcat.org/issn/1573-7799>).
27. Sariaslan, Amir; Långström, Niklas; D'Onofrio, Brian; Hallqvist, Johan; Franck, Johan; Lichtenstein, Paul (1 August 2013). "The impact of neighbourhood deprivation on adolescent violent criminality and substance misuse: A longitudinal, quasi-experimental study of the total Swedish population" (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3780994>). *International Journal of Epidemiology*. **42** (4): 1057–1066. doi:10.1093/ije/dyt066 (<https://doi.org/10.1093%2Fije%2Fdyt066>). PMC 3780994 (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3780994>). PMID 24062294 (<https://pubmed.ncbi.nlm.nih.gov/24062294>).
28. Fajnzylber, Pablo; Lederman, Daniel; Loayza, Norman (April 2002). "Inequality and Violent Crime". *The Journal of Law and Economics*. **45** (1): 1–39. CiteSeerX 10.1.1.559.483 (<https://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.559.483>). doi:10.1086/338347 (<https://doi.org/10.1086%2F338347>). S2CID 11378886 (<https://api.semanticscholar.org/CorpusID:11378886>).
29. Brookman, Fiona; Robinson, Amanda (12 April 2012). "Violent Crime" (<https://books.google.com/books?id=gl2pZWuVu28C&pg=PA563>). In Morgan, Rod; Maguire, Mike; Reiner, Robert (eds.). *The Oxford Handbook of Criminology*. OUP Oxford. pp. 563–594. ISBN 978-0-19-959027-8.
30. Wright, Bradley R. Entner; Caspi, Avshalom; Moffitt, Terrie E.; Miech, Richard A.; Silva, Phil A. (February 1999). "Reconsidering the relationship between SES and delinquency: Causation but not correlation". *Criminology*. **37** (1): 175–194. doi:10.1111/j.1745-9125.1999.tb00483.x (<https://doi.org/10.1111%2Fj.1745-9125.1999.tb00483.x>).
31. Sariaslan, A.; Larsson, H.; d'Onofrio, B.; Långström, N.; Lichtenstein, P. (2014). "Childhood family income, adolescent violent criminality and substance misuse: Quasi-experimental total population study" (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4180846>). *The British Journal of Psychiatry: The Journal of Mental Science*. **205** (4): 286–290. doi:10.1192/bjp.bp.113.136200 (<https://doi.org/10.1192%2Fbjp.bp.113.136200>). PMC 4180846 (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4180846>). PMID 25147371 (<https://pubmed.ncbi.nlm.nih.gov/25147371>).
32. Miller, J. Mitchell (18 August 2009). *21st Century Criminology: A Reference Handbook* (<https://books.google.com/books?id=mDluKVUcJ8AC&pg=PA412>). Sage. p. 57. ISBN 978-1-4129-6019-9.
33. "Family Planning – Healthy People 2020" (<https://web.archive.org/web/20101228012908/http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=13>). Archived from the original (<https://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=13>) on 2010-12-28. Retrieved 2011-08-18. Which cites:
 - Logan, Cassandra; Holcombe, Emily; Manlove, Jennifer; Ryan, Suzanne (May 2007). The Consequences of Unintended Childbearing (Report). Child Trends. CiteSeerX 10.1.1.365.2689 (<https://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.365.2689>). S2CID 4682087 (<https://api.semanticscholar.org/CorpusID:4682087>).
 - Cheng, Diana; Schwarz, Eleanor B.; Douglas, Erika; Horon, Isabelle (March 2009). "Unintended pregnancy and associated maternal preconception, prenatal and postpartum behaviors". *Contraception*. **79** (3): 194–198. doi:10.1016/j.contraception.2008.09.009 (<https://doi.org/10.1016%2Fj.contraception.2008.09.009>). PMID 19185672 (<https://pubmed.ncbi.nlm.nih.gov/19185672>).
 - Kost, Kathryn; Landry, David J.; Darroch, Jacqueline E. (March 1998). "Predicting Maternal Behaviors During Pregnancy: Does Intention Status Matter?". *Family Planning Perspectives*. **30** (2): 79–88. doi:10.2307/2991664 (<https://doi.org/10.2307%2F2991664>). JSTOR 2991664 (<https://www.jstor.org/stable/2991664>). PMID 9561873 (<https://pubmed.ncbi.nlm.nih.gov/9561873>).
 - D'Angelo, Denise V.; Gilbert, Brenda Colley; Rochat, Roger W.; Santelli, John S.; Herold, Joan M. (2004). "Differences Between Mistimed and Unwanted Pregnancies Among Women Who Have Live Births". *Perspectives on Sexual and Reproductive Health*. **36** (5): 192–197. doi:10.1363/3619204 (<https://doi.org/10.1363%2F3619204>). PMID 15519961 (<https://pubmed.ncbi.nlm.nih.gov/15519961>).

34. Walsh, Anthony; Beaver, Kevin M (28 January 2013). "Biosocial Criminology" (<https://books.google.com/books?id=V9KhAgAAQBAJ>). *The Ashgate Research Companion to Biosocial Theories of Crime*. Ashgate Publishing, Ltd. ISBN 978-1-4094-9470-6.
35. Walton, Kenneth G.; Levitsky, Debra K. (11 August 2003). "Effects of the Transcendental Meditation Program on Neuroendocrine Abnormalities Associated with Aggression and Crime". *Journal of Offender Rehabilitation*. **36** (1–4): 67–87. doi:10.1300/J076v36n01_04 (https://doi.org/10.1300%2FJ076v36n01_04). S2CID 144374302 (<https://api.semanticscholar.org/CorpusID:144374302>).
36. "Phase-out of leaded petrol brings huge health and cost benefits – UN-backed study" (<https://news.un.org/en/story/2011/10/393292-phase-out-leaded-petrol-brings-huge-health-and-cost-benefits-un-backed-study>). United Nations News Centre. 27 October 2011.

Sources

Ellis, Lee; Beaver, Kevin M.; Wright, John (1 April 2009). *Handbook of Crime Correlates* (<https://books.google.com/books?id=eD0ttBXoMvQC>). Academic Press. ISBN 978-0-12-373612-3.

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