Shoplifting and neighbourhood crime at age 17:

Longitudinal evidence from the UK Millennium Cohort Study

Adolescence is characterised by biological and environmental changes that influence risk taking behaviours, including increased involvement in criminal and antisocial activities.[1] Although offending behaviour tends to be limited to adolescence, it is nonetheless important, as it risks the onward development of criminal behaviour,[2] and has the potential to harm both individuals committing offences and others around them.

This report summarises analyses from the Millennium Cohort Study (MCS), focusing specifically on the overall prevalence of shoplifting and neighbourhood crime at age 17, and their co-occurrence with other types of offences, as well as factors predicting these offences. A separate report covers the prevalence and predictors of carrying or using a weapon at age 17.[3]

Key findings

- At age 17, shoplifting was a more common offence (8.7%) than neighbourhood crime (3.0%), though participants engaging in both crime types were more likely to be male.

- Between age 14 and 17, there was an increase in the prevalence of shoplifting and one aspect of neighbourhood crime.

- Those taking part in offending behaviours at age 14 were much more likely to shoplift and engage in neighbourhood crime at age 17.

- At age 17, those who engaged in shoplifting or neighbourhood crime were much more likely to engage concurrently in other types of offences, engage in multiple types of offences, and be classified as a prolific offender (offend on 10 or more occasions).

- Earlier experiences of self-harm and substance use at age 14 were predictors of both crime types at age 17. Both parental and peer drug use were predictive of shoplifting.

- Pakistani and Bangladeshi participants were less likely to shoplift, whilst those of Black origin were more likely to engage in neighbourhood crime.

Key definitions

Neighbourhood crime is defined in our analyses as theft from person, breaking and entering, or vehicle theft, in the 12 months prior to the Age 17 Survey.

Shoplifting is defined in our analyses as taking something from a shop without paying for it, in the 12 months prior to the Age 17 Survey.

Prevalence of shoplifting and neighbourhood crime

It is important to note that engaging in both shoplifting and neighbourhood crime tended to be concentrated, with a very small group of participants responsible for most offences:

■ **A total of 2,304 instances of shoplifting and 252 instances of neighbourhood crime in the past year were reported across the sample.**
Of these, 77.4% of shoplifting offences were carried out by just 1.9% of all participants, and 71.4% of neighbourhood crime offences were concentrated amongst only 1.7% of participants.

Overall, as shown in Figure 1, shoplifting is a more common offence than neighbourhood crime at age 17, with 8.7% of participants engaging in the former in the last year and 3% in the latter.

Participants engaging in both crime types were also more likely to be male – 10.1% of males engaged in shoplifting compared to 7.1% of females, and 3.7% of males engaged in neighbourhood crime compared to 2.1% of females.

FIGURE 1: PREVALENCE OF SHOPLIFTING AND NEIGHBOURHOOD CRIME AT AGE 17, OVERALL AND BY SEX
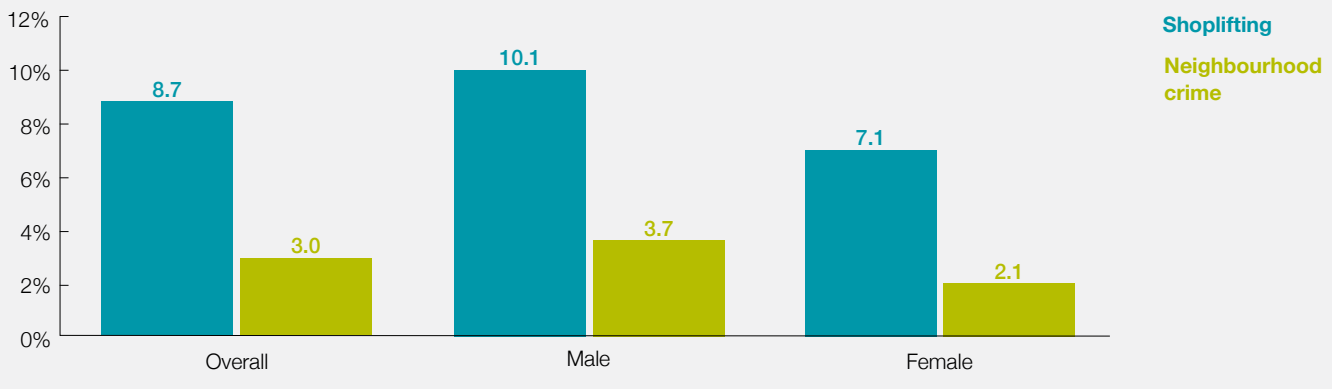
There was an increase in both shoplifting and one aspect of neighbourhood crime between the ages of 14 and 17. The prevalence of shoplifting more than doubled, increasing from 4.1% at age 14 to 8.7% at age 17. Although not all measures making up neighbourhood crime were asked about at age 14, the prevalence of breaking and entering stayed at 0.3% at both age 14 and 17, and theft nearly doubled from 1.5% at age 14 to 2.6% at age 17.

Shoplifting or neighbourhood crime and overlap with other offences at age 17

At age 17, there was a significant overlap between those engaging in shoplifting or neighbourhood crime and more serious offences, including cybercrime, criminal damage and assault, as well as offending multiple times.
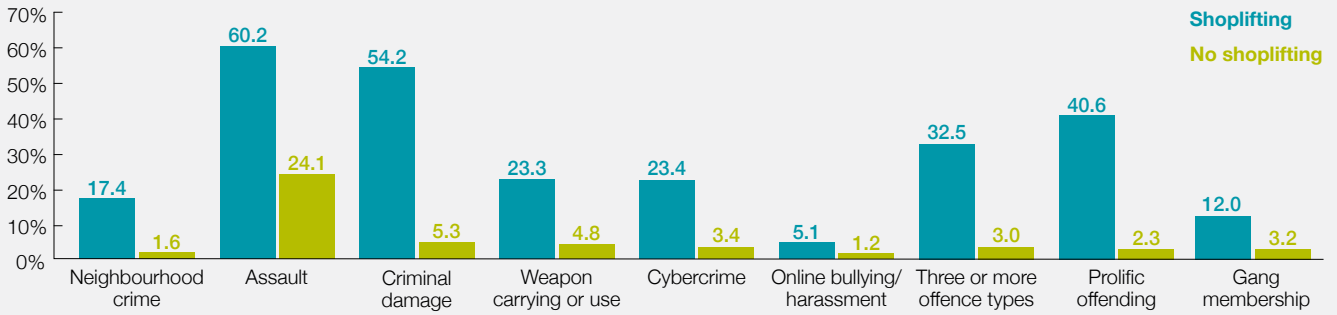
Shoplifting

Shown in Figure 2 are prevalences of other types of offences at age 17, by those who had shoplifted versus those who had not. Of those engaging in shoplifting at age 17, 60.2% had also engaged in assault, 54.2% in criminal damage, 23.4% in cybercrime, 23.3% in weapons carrying or use and 17.4% in neighbourhood crime. Engagement in criminal damage and cybercrime were most strongly linked with shoplifting – those who shoplifted (versus not) were 10.2 times more likely to engage in criminal damage at age 17, and 6.9 times more likely to commit cybercrime.

Shoplifting was very strongly linked to offending multiple times. About a third (32.5%) of those who shoplifted at age 17 had engaged in three or more crime types, and 40.6% were prolific offenders having offended on 10 or more occasions. Those who shoplifted (versus not) were 10.8 times more likely to commit three or more crime types, and 17.7 times more likely to be prolific offenders by having offended on 10 or more occasions. Gang membership at age 17 was also linked, with participants who shoplifted being 10.9 times more likely to be in a gang than those who did not.

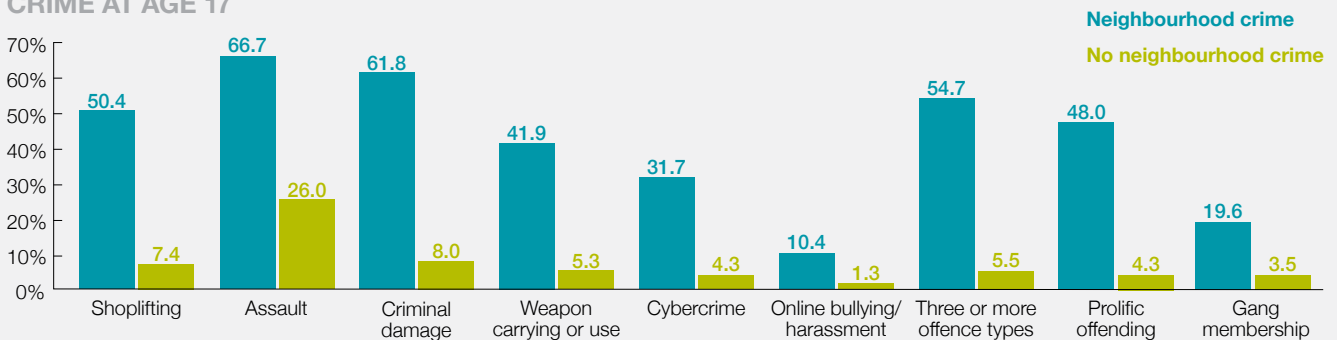**FIGURE 2:** PREVALENCE OF OTHER OFFENCES AT AGE 17, BY ENGAGEMENT IN SHOPLIFTING AT AGE 17

Neighbourhood crime

Shown in Figure 3 are prevalences of other types of offences at age 17, by those who had engaged in neighbourhood crime versus those who had not. Of those who engaged in neighbourhood crime at age 17, 66.7% had also engaged in assault, 61.8% in criminal damage, 50.4% in shoplifting, 41.9% in weapons carrying or use, 31.7% in cybercrime and 10.4% in online bullying or harassment. Engagement in online bullying and harassment, weapons carrying or use and criminal damage at age 17, were particularly strongly linked. Those who engaged in neighbourhood crime (versus not) were, 8 times more likely to engage in online

bullying and harassment, 7.9 times more likely to carry or use a weapon and 7.7 times more likely to engage in criminal damage.

A link between multiple offending, gang membership and neighbourhood crime was also observed. Over half (54.7%) of those who engaged in neighbourhood crime at age 17 also reported engaging in three or more crime types in the past year, and 48% were prolific offenders having offended on 10 or more occasions. Those who engaged in neighbourhood crime (versus not) were 9.9 times more likely to commit three or more crime types, 11.2 times more likely to be prolific offenders, and 5.6 times more likely to be in a gang.

FIGURE 3: PREVALENCE OF OTHER OFFENCES AT AGE 17, BY ENGAGEMENT IN NEIGHBOURHOOD CRIME AT AGE 17

# Age 14 offending as an indicator of shoplifting or neighbourhood crime at age 17

Shown in Figure 4 and Figure 5 are prevalences of neighbourhood crime and shoplifting at age 17, by a range of offences at age 14. Those who engaged in offending behaviours at age 14 were more likely to go on to engage in neighbourhood crime or shoplifting at age 17, compared to those who did not – suggesting earlier offending is an indicator of continued engagement in both crime types.

In particular, engagement at age 14 in three or more offence types, weapons carrying and use, and

shoplifting, were most strongly linked with neighbourhood crime at age 17, with those committing these offences being over four times as likely to engage in neighbourhood crime at age 17.

Engagement at age 14 in three or more offence types and in shoplifting, were similarly strongly linked to shoplifting at age 17, with participants engaging in these behaviours being 3.7 times and 4.7 times more likely to shoplift at age 17, respectively.

FIGURE 4: PREVALENCE OF NEIGHBOURHOOD CRIME AT AGE 17, BY OTHER OFFENCES AT AGE 14
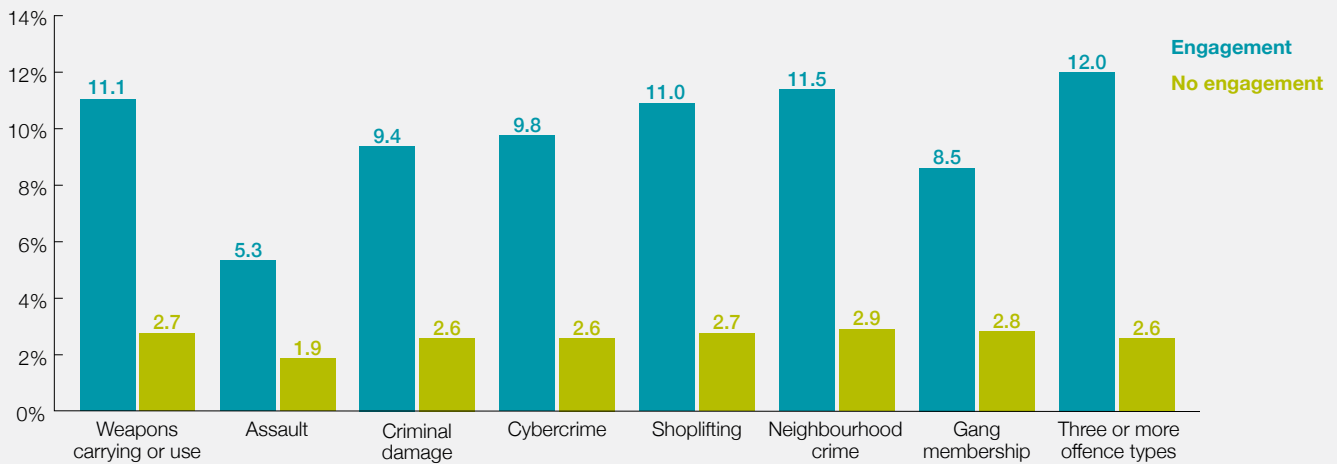
FIGURE 5: PREVALENCE OF SHOPLIFTING AT AGE 17, BY OTHER OFFENCES AT AGE 14
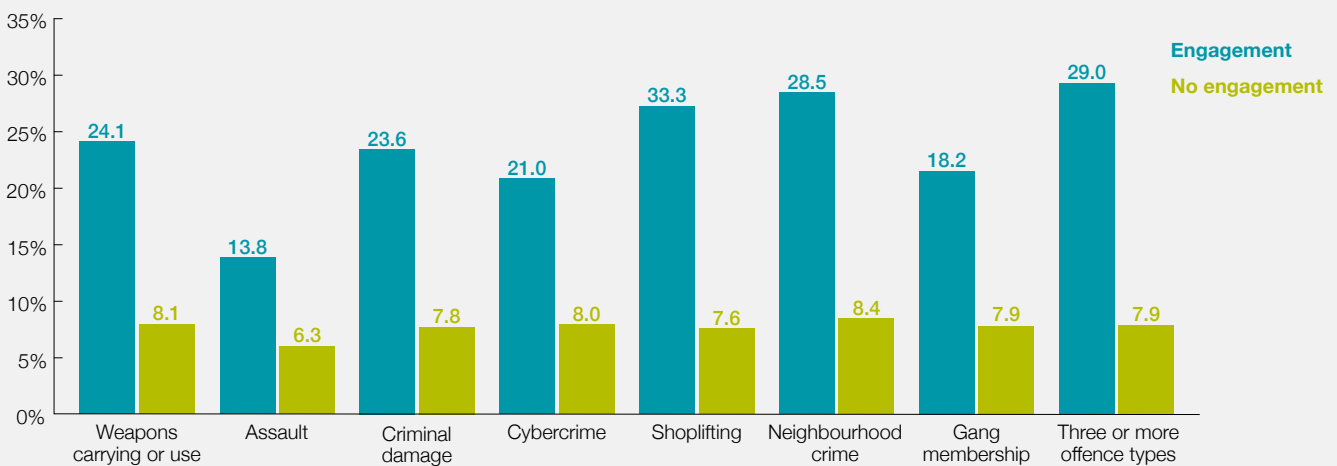
Other predictors of neighbourhood crime and shoplifting at age 17

Multivariate regressions were carried out to identify key factors across various aspects of participants' lives which were most closely associated with neighbourhood crime and shoplifting, whilst controlling for other confounding variables. Results are shown in Table 1.

The first model includes individual characteristics, then in model 2 family income and environment, and childhood and adolescent mental health were added, and finally in model 3 participants' age 14 substance use and experiences with peers, school, and leisure time were included. Coefficients are reported as odds ratios (OR). An OR greater than one means a higher likelihood in comparison to the reference group, so a risk factor for shoplifting or neighbourhood crime, while an OR below one signifies a lower likelihood, or a protective factor against shoplifting or neighbourhood crime.

Results show that significant risk factors for shoplifting at age 17 were being male, and family factors included parental drug use; at age 14, self-harm, use of substances,

and having peers who used multiple substance were all predictive of age 17 shoplifting. Protective factors for age 17 shoplifting included being of Pakistani or Bangladeshi origin, and having childhood internalising problems.

Significant risk factors for neighbourhood crime at age 17 were being male, being Black or Black British, self-harm at age 14, and use of substances at age 14. No statistically significant protective factors were found for neighbourhood crime.

It is noticeable that in later models the association between age 17 offences and earlier experiences (e.g. parental drug use) weakened once age 14 experiences and behaviours were included. This suggests that the effect of these earlier experiences is partially mediated through adolescents' later behaviours and experiences, meaning that early experiences influence age 14 experiences, which in turn influence age 17 offending.

Table 1: Predictors of neighbourhood crime or shoplifting at age 17: results of multivariate logistic regression

OFFENCE TYPE	SHOPLIFTING			NEIGHBOURHOOD CRIME		
	Model 1 OR	Model 2 OR	Model 3 OR	Model 1 OR	Model 2 OR	Model 3 OR
INDIVIDUAL CHARACTERISTICS						
Male	**1.46***	**1.63***	**1.69***	**1.85***	**1.93***	**1.66***
Oldest child in household	0.99	1	1.04	0.89	0.84	0.89
Cohort member age in months at age 17 survey	1.02	1.02	1.01	1.01	1.01	1
Ethnicity (ref. White)						
Mixed	1.43	1.26	1.33	1.63	1.41	1.53
Indian	0.49+	0.57	0.71	0.28	0.36	0.46
Pakistani and Bangladeshi	**0.36***	**0.46***	0.59+	0.51+	0.71	0.92
Black or Black British	1.07	1.12	1.3	**1.86***	**1.97***	**2.45***
Other Ethnic group (incl. Chinese)	0.92	1.01	1.26	0.45	0.54	0.68
FAMILY SOCIOECONOMICS						
Household income weekly (average 9mths to age 11) (ref. 80-100% highest)						
20% lowest		0.95	0.93		0.72	0.65
20-40%		0.98	0.96		0.73	0.69
40-60%		1.04	1.04		0.84	0.84
60-80% highest		0.97	0.97		0.86	0.87
FAMILY ENVIRONMENT						
Breastfed		1.04	1.07		1.17	1.21
Mother smoked during pregnancy		0.96	0.88		1.12	1.03
Parent-child relationship (parent reported) age 3 [a]		1.02	1.01		0.93	0.91
Main parent mental health problems (9mths-11yrs) [a]		1.09	1.08		0.99	0.98
Domestic abuse between parents (9mths-11yrs)		1.12	1.06		1.18	1.12
Main parent used recreational drugs (age 3, 5 or 14)		**1.67***	1.49+		1.44	1.24
Ever single parent between 9mths and 11yrs		1.22	1.11		1.50+	1.34
CHILDHOOD MENTAL HEALTH						
Childhood externalising problems (age 3-11) [a]		1.13+	1.04		1.23+	1.08
Childhood internalising problems (age 3-11) [a]		**0.83****	**0.87***		0.89	0.91
ADOLESCENT MENTAL HEALTH						
Age 14: Self-harmed in past year		**2.14***	**1.56***		**2.03***	1.42+
SUBSTANCE USE AT AGE 14						
Binge drinking, regular smoking, trying cannabis/drugs (ref. none of these)						
One type of substance			**1.55***			**1.78***
Two or three types of substances			**1.71***			**2.19***
SOCIAL MEDIA AND GAMING AT AGE 14						
Age 14: Social media time use [b]			1.08			0.83
Age 14: Computer/electronic gaming time use [b]			0.87			1.24
SCHOOL FACTORS						
Five A to C GCSEs			0.91			0.71+
School exclusion in secondary between age 11 and 14			1.05			1.33
Persistent truancy (more than just the once) past year at age 14			1.41			1.48
PEER FACTORS AT AGE 14						
Age 14: Spending time with friends in leisure time on most days			1.13			1.03
Age 14: Victim of peer bullying			1.16			1.3
Age 14: Peer substance use (alcohol, smoking, drugs) (ref. no substance use)						
One type of substance			1.22			1.14
Two or three types of substances			**1.77***			1.32

*** p<0.001, ** p<0.01, * p<0.05, + p<0.10
Confidence intervals are not shown due to lack of space.
a This predictor variable is standardised (z score), meaning that the odds ratio coefficient is for one standard deviation increase in the predictor.

b This predictor variable is a ridit score, and the odds ratio coefficient corresponds to differences between those with the highest time use compared to those with the lowest.

Discussion

Care should be taken when interpreting the results of these analyses, particularly where significant predictor variables are identified. Whilst the models used are richly controlled using observational data, we cannot rule out reverse causation or unobserved confounding between variables. As such, we cannot be certain that relationships linked to shoplifting or neighbourhood crime are causal. Further, the prevalence of both crime types is relatively uncommon, especially neighbourhood crime, which may cause issues of statistical power in these models, especially when a predictor variable also consists of a small group (e.g. some ethnic groups).

Sex

As set out above, being male is a risk factor for both shoplifting and neighbourhood crime at age 17. The sex differences in offending identified in our analyses have been shown in numerous previous studies,[4] and reflected in official statistics, although in the criminal justice system the gap is even wider with males accounting for around 85% of arrests and 75% of convictions.[5] This suggests that sex is an important driver in offending and supportive of evolutionary approaches to understanding crime.[6]

Ethnicity

Ethnicity in relation to offending is a very complex matter and it seems that different patterns exist for different types of offences.[7] It is clear it is not useful to consider all ethnic groups under a combined Black, Asian and minority ethnic (BAME) heading as there is much heterogeneity between these groups.

Our analysis suggests that Pakistani and Bangladeshi participants were much less likely to engage in shoplifting compared to others, whereas Black or Black British respondents were more likely to engage in neighbourhood crime.

Family socioeconomics and family environment

Poverty and low socioeconomic status during childhood are well-established risk factors for subsequent antisocial and criminal behaviour. However, nothing in our analyses suggested that low income was a significant risk factor for either shoplifting or neighbourhood crime, though of course it is highly correlated with many of the other factors in the model, so it is difficult to isolate its specific role. Similarly, our analyses show that having a main parent using recreational drugs is an indicator of shoplifting at age 14, though as above, the influence of these earlier childhood experiences attenuated when other age 14 experiences and behaviours were included.

Mental health

Analysis showed that a high level of internalising problems (emotional and peer problems) were protective factors in relation to shoplifting at age 17. Self-harm at age 14 was a significant risk factor for both shoplifting and neighbourhood crime. Whilst the link to externalising problems (or conduct problems and hyperactivity) is well-established,[8][9] we found no significant association with the age 17 offences examined here, although we note the low prevalence of these offences and highlight that these had borderline significant associations with conduct problems. The association with emotional symptoms such as self-harm has been less well researched, however, a previous study using the MCS examined this and found that a high level of depressive symptoms at age 14 was related to a high level of concurrent antisocial behaviour.[10]

> " **Targeting substance use in adolescents may be an important element to help reduce offences.** "

Substance use

Our analysis shows that substance use at age 14 (binge drinking, regular smoking, trying cannabis or other drugs) are significant risk factors for both shoplifting and neighbourhood crime. The association between substance use and offending is consistent with previous research and extremely well established in the literature,[11] including examination of the current sample at age 14. Mental health tends to be related to substance use,[12] also previously shown in the current MCS sample, and may be a driver of the association between substance use and offending. However, the association with substance use in our analyses remained after controlling for childhood and adolescent mental health.

In addition, peer substance use at age 14 is linked to shoplifting. The importance of peers has also been demonstrated in a wealth of previous research.[13] In terms of policy implications, targeting substance use in adolescents may be an important element to help reduce offences. Whilst some interventions are targeted at the individual, others focus specifically on resistance to peer pressure, with evidence of effectiveness.[14] It is interesting to note that there is evidence of a downward trend in the use of substances amongst young people over the last two decades, [15][16][17] whilst youth offending has also been seen to decline over this period.[18] Further research is needed to examine the extent to which there may be a causal relationship.

Previous offending at age 14

Although persistent offending (engagement at both age 14 and 17) was shown in previous analysis to be quite rare, shoplifting previously at age 14 was highly predictive of continued engagement at age 17, as was previous engagement in other types of offences. Participation in many different types of offending activities at age 14 was also predictive of neighbourhood crime at age 17.

Early onset of offending has in the criminological literature been shown to be one of the strongest predictors of long-term offending.[19] Explanations are likely to include that the individual is carrying the same criminogenic risks across time, and that early onset is a proxy for many other influential factors that are likely to affect child and adolescent development (e.g. temperament, cognitive skills), which in turn affect offending behaviours.[20] In terms of policy, this suggests that early prevention and intervention that directly target the risk factors for offending are needed.

Acknowledgements

About the Millennium Cohort Study

The Millennium Cohort Study (MCS) is a UK nationally representative birth cohort study following an initial sample of over 19,000 individuals born around the millennium (Sep 2000 – Jan 2002).[21] The initial survey was at age 9 months, with follow-ups at ages 3, 5, 7, 11, 14 and 17. This longitudinal study is highly multidisciplinary with detailed information collected on individuals (participants) and their families. In 2018-19 at age 17, a range of offending behaviours were self-reported by participants, with analyses in this report based on 13,277 participants.

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