Understanding the dynamics of factors influencing 17 year olds in Ireland coming into conflict with the law – a network analysis of the Growing Up in Ireland data.

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The Study

Ensuring the collaborative reform of youth justice in Ireland in line with international research and evidence-based approaches.

Professor Ursula Kilkelly, Dr Louise Forde, Dr Emma Hurley, Dr Sharon Lambert, Dr Katharina Swirak, Deirdre Kelleher and Siobhan Buckley.

Three key questions.

1.   What are the factors associated with involvement in anti-social behaviour, getting into trouble with the Gardaí and/or contact with the youth justice system?

2.   What are the factors which may operate in a protective or a preventative way for young people who do not become involved in anti-social behaviour or contact with the Gardaí and the youth justice system?

3.   What implications do these findings have for the future development of Irish youth justice policy and youth justice practice?

Three key components

The first component of the study was a review of the available peer reviewed published literature from the key disciplines of law, psychology and social science.

The second component was listening directly to the young people impacted by these issues. Focus groups were held nationally with young people. Including experiences and voices of young people was important both to hear their views and to test the relevance and the validity of the international research. A youth advisory panel was a key element of the study.

The third component was an analysis of empirical relevant data from the Growing up in Ireland (GUI) 98 cohort.

Findings from the literature review suggest a complex dynamic system of factors influencing the likelihood of young people coming into contact with the law.

These factors operate at the personal, familial and societal level.

Based on these findings the hypothesis for the quantitative data analysis was that the dynamic between factors and the strength of relationship between factors would vary for young people who have come into conflict with the law compared to those who had not.

A comprehensive analysis of the GUI 98 cohort (formerly the child cohort) was conducted.

All three waves of the data were examined , and their suitability considered for inclusion. Broadly, responses were considered for inclusion if they pertained to those factors identified as contributing to young people coming into conflict with the law as identified in the literature review. Descriptive statistics of all responses were examined.

The analysis focuses on wave 3 of the 98 cohort (when the young people were 17 years old).

The total of young people who responded 'Yes' to the question 'Have you ever been in trouble with the Gardaí, excluding minor traffic offenses?' was used as confirmation that a young person had come into conflict with the law.

	N	%
No	5575	90.7
Yes	567	9.3
Total	6142	100

Of those who responded yes or no to the question at wave 3, 9.3% had been in trouble with the Gardaí, excluding minor traffic offenses .

Gender and conflict with the law

	Male	Female	Total
Yes	65.4	34.6	100
No	46.7	53.3	100

The GUI survey has consistently balanced responses from males and females across waves, reflective of the gender balance in the population. At wave three, males were more likely to come into conflict with the law, consisting 65.4% of the sample who had reported coming into conflict with the law compared to 34.6% female. The conflict with the law – no group reflects this consisting 46.7% male and 53.3% female.

SES

Socio-economic status and conflict with the law.

Household Social Class	% of overall sample	YPCWL No Valid percent	YPCWL Yes Valid percent	Diff
Professional	14.37	14.7	11.1	<3.6
Managerial and Technical	36.47	36.6	34.7	<1.9
Non-manual	19.2	19.4	17.6	<1.8
Skilled Manual	9	8.7	11.3	>2.6
Semi-skilled	8	7.9	10.4	>2.5
Unskilled	1.1	1.1	0.9	
All others gainfully occupied and unknown		0.5	0.5	
Validly no social class	11.1	10.9	13.4	>3.4
Total		100	100	

N=6142

Of note here is that there is a spread of young people in conflict with the law across social classes – with little difference between actual and expected figures if we were to expect a proportional representation from each class. However, we see lower prevalence in the first three classes in the table and higher than expected in subsequent classes. The largest differences being at the tail ends – 3.6% lower representation of young people in conflict with the law in the professional class and 3.4% higher for no social class.

	YPCWL	YPCWL N	
One PCG	22.5	14.2	>8.3
Two CG	76.4	85.9	<9.5

Young people in conflict with the law are disproportionately represented in single primary care giver households.

Stressful life events

Death of a parent	Serious illness/injury
Death of a close family member	Serious illness/injury of a close family member
Death of a close friend	Drug taking/alcoholism in immediate family
Separation/divorce of parents	Mental disorder in immediate family
Moving house	Conflict between parents
Moving country	Parent in prison
Stay in foster care/residential care	Other disturbing event

There was no significant relationship between any one stressful life event and coming into conflict with the law.

However, in line with the literature, there was a significant correlation between the young person's total number of stressful life events and their likelihood of coming into conflict with the law. This total score is included in the network analysis.

Education

Level of education of Primary Care Giver and young person staying in education have been identified as protective factors in the literature. Related to socio-economic status, level of education of Primary Care Giver is used as a metric of socio-economic status in other longitudinal studies.

Age of leaving education for the first time for both primary caregiver and young person was related to young person coming into conflict with the law (earlier school leaving being positively correlated to young person coming into conflict with the law).

Social capital.

	Church	Education	Gardaí	Social W system	Healthcare System	Politicians	The Courts System
A great deal	5.4	13.0	22.7	5.5	16.1	0.9	11.3
Quite a lot	23.5	55.0	54.0	45.6	48.5	13.6	50.1
Not very much	43.9	28.6	19.4	36.1	29.3	53.6	27.8
None at all	26.8	3.2	3.5	7.4	4.7	29.9	7.2
Total	99.5	99.8	99.6	94.5	98.7	98.0	96.5

Confidence in institutions.
Percentage responses to questions on confidence in institutions.
Young people had the lowest e[endorsement of the Church and politicians, followed by the social welfare system and the courts. Overall, there is high endorsement for the Gardaí. Young people who come into conflict with the law show lower endorsement for the Court system and the Gardaí compared to the conflict with the law – no group in subsequent analyses.

Social Capital

Condition of neighbourhood.
There was a considerable difference in Primary care Givers' perceptions of the condition of their neighbourhoods and that of young people. Questions asked the frequency of rubbish laying around, graffiti, condition of houses and gardens, vandalism and drunkenness and drug taking.

L3b. How common in the local area - Homes and gardens in bad condition.
L3a. How common in the local area - Rubbish and litter lying about
L3c. How common in the local area - Vandalism and deliberate damage to property
L3d. How common in the local area - People being drunk or taking drugs in public

The scores for these responses were aggregated into a total condition of neighbourhood score. Young people's negative perception of the condition of their neighbourhood was positively correlated with the likelihood of young people in conflict with the law.

Is my neighbourhood safe?

There was a similar differential in responses between Primary Care Givers and young people regarding the safety of their neighbourhood. There was a negative correlation between safety of neighbourhood and children in conflict with the law. The safer young people perceived their neighbourhood to be the less likely they were to come into conflict with the law.

Quality of family and peer relationships

There were a number of questions and scales addressing the quality of relationship of young people with primary care giver, teachers and peers. There were a number of correlations between the quality of relationships and young people in conflict with the law. Indicators of positive attachment styles and open communication (primary care giver disclosure for example) were related to lower conflict with the law. Having a positive experience of relationships with people in the home was related to lower conflict with the law. Negative primary care giver behaviours, such as higher scores on conflict and unreliability were related to higher levels of conflict with the law. Positive peer attachments and open communication with peers were related to lower conflict with the law.

Anti-social behaviours, alcohol consumption, smoking and sexual activity

A series of questions addressed frequency of anti-social behaviours, all of these behaviours had very small but significant correlations with conflict with the law. Patterns of responses between those in conflict with the law and not differed and this difference in behaviour can be seen more clearly in the network analysis. Higher levels of sexual activity, higher levels of alcohol consumption and smoking were all related to conflict with the law.

Measures of cognitive ability

Measures of cognitive ability – vocabulary, naming and maths scores taken in the young people home were all correlated with children in conflict with the law, higher scores were related to lower probability of conflict with the law.

Having a general learning disability was positively related to young people in conflict with the law.

Lower scores on the adult identity resolution scale (AIRS), a measure of maturity, was positively correlated with young people coming into conflict with the law.

Personality factors

Higher scores on conscientiousness indicated less likelihood of conflict with the law, while higher scores on agreeableness and extraversion were related to conflict with the law.

Extraversion is related to sensation-seeking behaviour, while those scoring higher on conscientiousness are more likely to respect rules. People with higher scores on agreeableness are likely to be open to peer pressure .

Young people who had higher scores in internal locus of control measures were less likely to conflict with the law .

There are many factors contributing to young people coming into conflict with the law.

The factors found to relate to young people coming into conflict with the law reflect the findings from the literature review.

These factors often overlap – for example single primary caregiver households are impacted economically and overall have a lower SES than two caregiver households.

Network analysis

In order to capture the dynamic of factors relating to young people coming into conflict with the law a comparative network analysis was conducted.

This method produces a map, or network, of factors.

Like factor analysis, this is a data reduction technique. Factors are clustered together according to similarity.

However unlike factor analysis the space between clusters on the map have meaning.

Factors close together are related – while those further apart are dissimilar.

Strength of relationship between factors is indicted by an
'edge' or line. Thicker edges indicate stronger relationships.

Network analysis

For this analysis we consider two groups – young people in conflict with the law and young people who have not come into conflict with the law.

Network analysis provides a way of examining complex relationships between many collinear variables (Epskamp, Borsboom, & Fried, 2018).

We can examine how the two groups differ in terms of the relationships between factors and the strength of those relationships.

Epskamp, S., Borsboom, D., & Fried, E. I. (2018). Estimating psychological networks and their accuracy: A tutorial paper. Behavior Research Methods, 50(1), 195–212. https://doi.org/10.3758/s13428-017-0862-1

Fried, E. I., van Borkulo, C. D., Cramer, A. O. J., Boschloo, L., Schoevers, R. A., & Borsboom, D. (2017). Mental disorders as networks of problems: a review of recent insights. Social Psychiatry and Psychiatric Epidemiology, 52(1), 1–10. https://doi.org/10.1007/s00127-016-1319-z

In order to be able to usefully compare the networks of two groups we use Euclidian geometry (Multidimensional scaling) and General Procrustes Analysis to produce a graphical representation of the data.

Each factors' coordinate, or position, in that space, is a result of the scores of all people in that group for that factor reduced to two dimensions.

The network for each group is then represented in a common space, allowing for comparison.

Cox, T.F. & Cox, M. A. A. (2001). Multidimensional Scaling (2nd ed.). London: Chapman & Hall.

Gower, J. C. (1975). Generalized Procrustes Analysis. Psychometrika, 40(1), 33–51.
https://doi.org/10.1007/BF02291478

Over 200 factors of interest were identified based on our literature review for consideration.

All variables were inspected for suitability for analysis. For example, although frequency of smoking was related to young people coming into conflict with the law there was a low response rate to this question. This was therefore excluded from the analysis.

Of the initial variables considered 115 were retained.
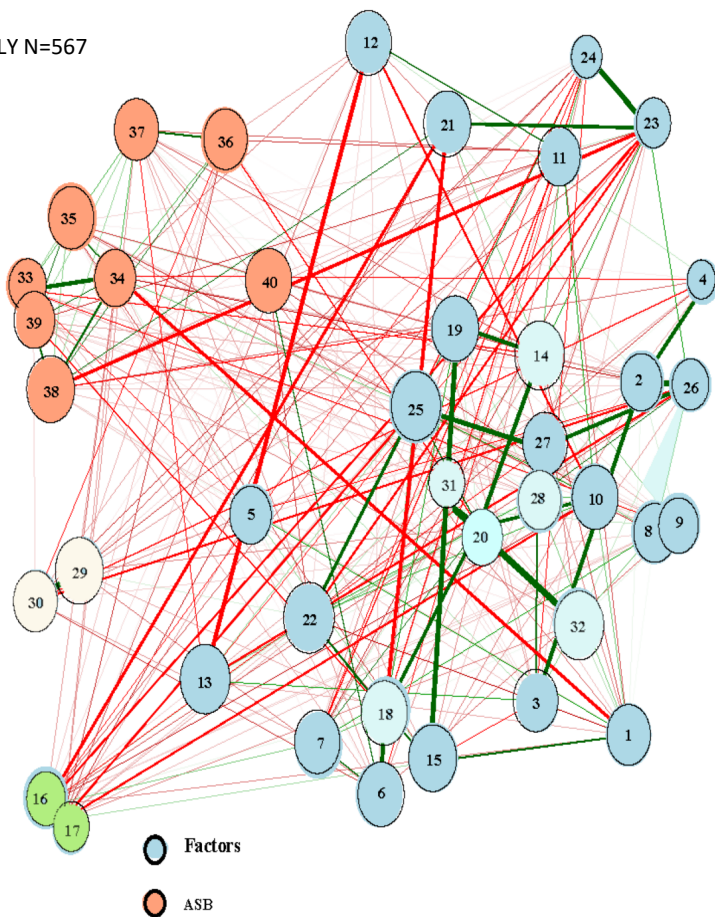
Lasso regression was then conducted to reduce the dataset further.

Lasso regression is a machine learning technique which excludes variables where lambda=0.

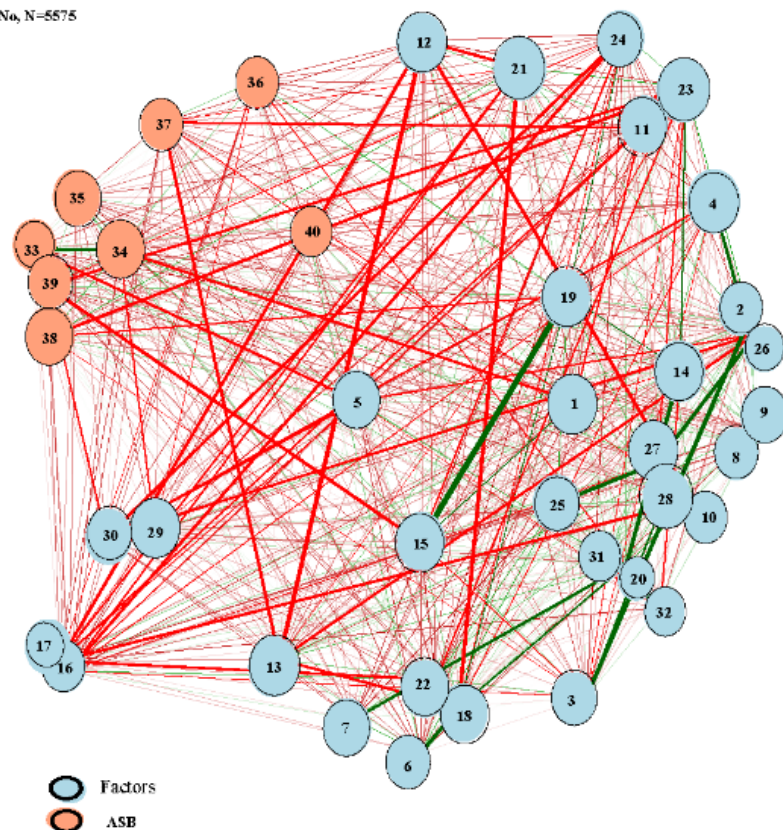40 variables were retained on this basis for network analysis.

The networks

CWLY N=567

Network of factors for young people who have come into conflict with the law at wave 3

CWL No, N=5575

Network of factors for young people who have not come into conflict with the law at wave 3.

The distribution of factors in each network are similar.

For example anti-social behaviours appear as a cluster on the left-hand side of the network for both groups. Factor 40 is separate from the cluster with few edges with other ASB factors for both groups.

Cognitive ability measures are clustered together, as are negative parenting styles.

However strength of relationships between factors differ across groups. And the positioning of some factors, such as Stressful Life Events, differ.
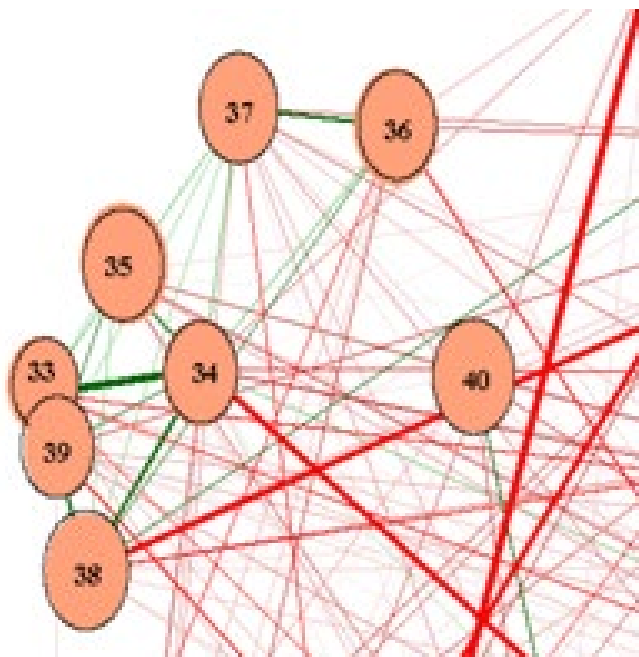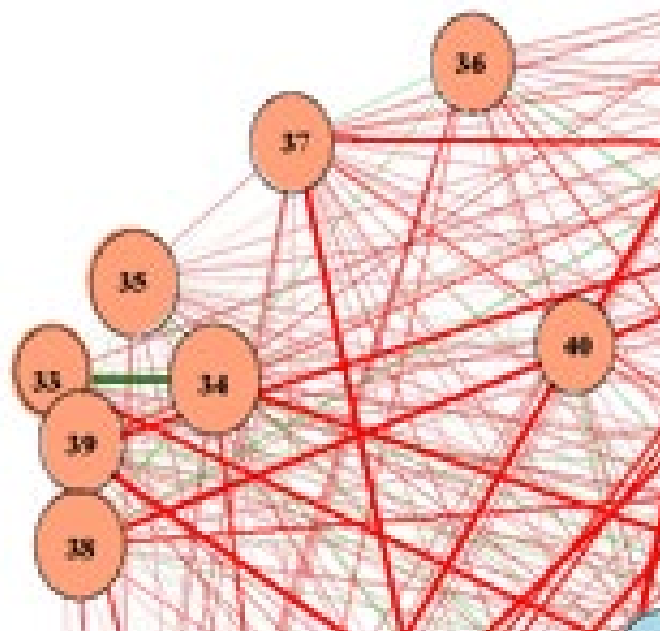
Anti-social behaviour cluster

The anti-social behaviour factors (in pink) differ in connectivity for each map, many antisocial behaviours having stronger edges with each other for young people who have come in conflict with the law, with the exception of factors 33 and 34.
33Taken something from shop or store without paying for it
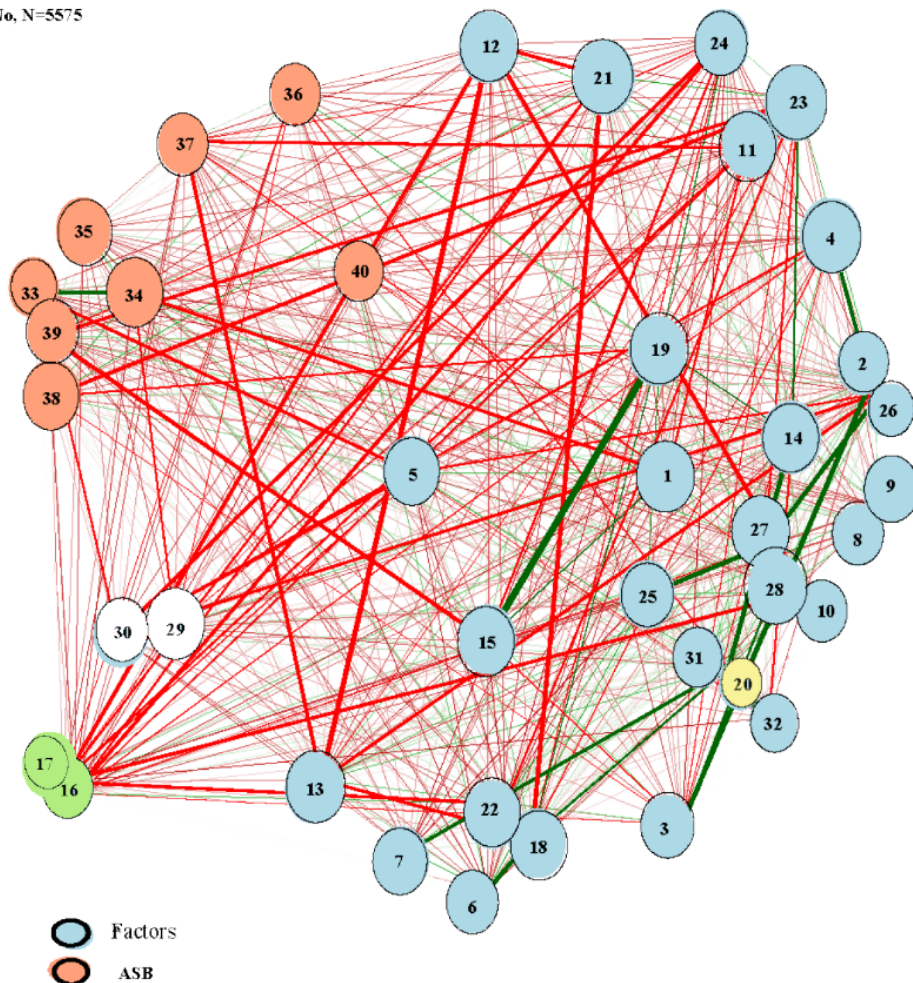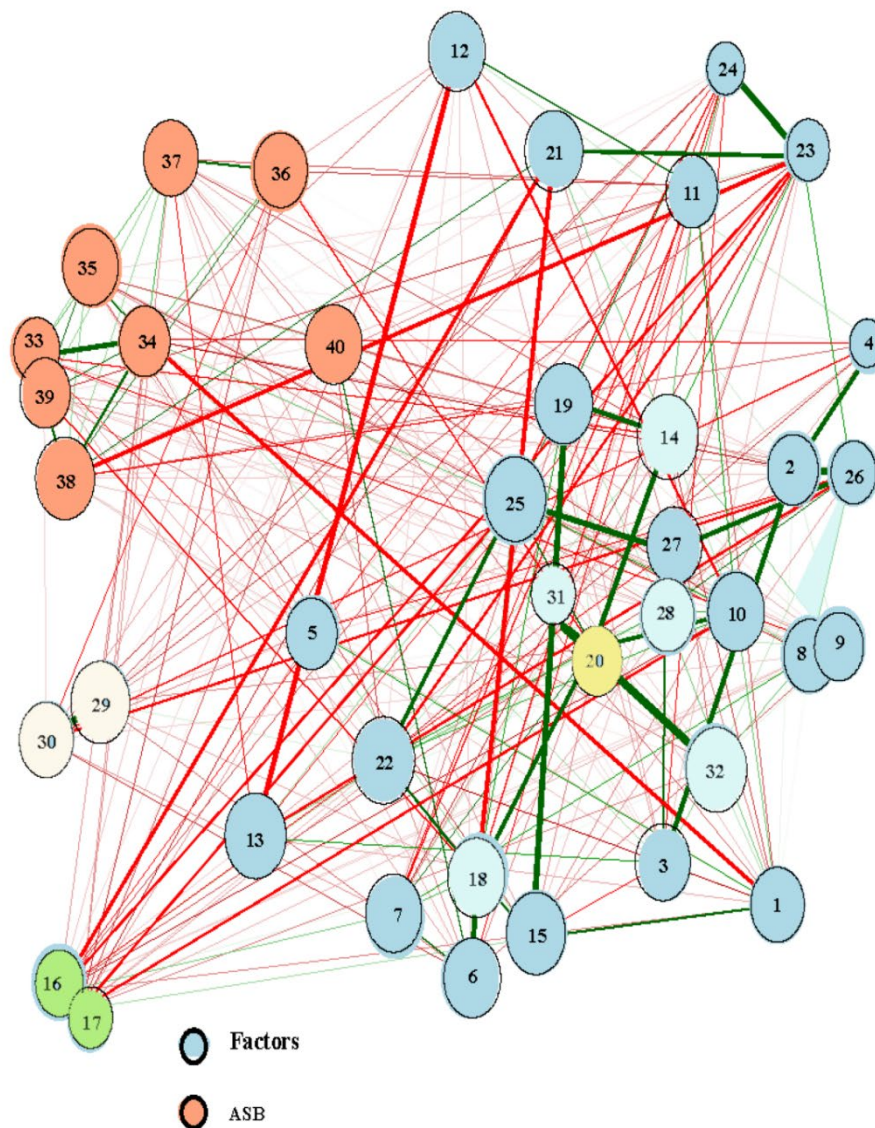34 Not paid the correct fare on bus or train.

Conflict with the law.

No conflict with the law.

CWL No, N=5575

1 ACE total
2 Has YP ever had a psychological or emotional condition _r
3 Does YP have general learning disabilities _r
4 How many times in the last 12 months consulted helplines (YP)
5 Household type (Two PCGs, one PCG)
6 Is the YP still in education
7 Age PCG left school for the first time-r
8 YP condition of neighbourhood total_r
9 YP agree or not. This is a safe area
10 YP how well household members get on_r
11 AIRs total_r
12 Value of work
13 Sex equality_r
14 EDS discrimination scores
15 Sexual activity
16 PCG conflict_r
17 PCG unreliability_r
18 YP control_r
19 YP AUDIT total (alcohol consumption).
20 T YP Opposition to authority
21 Mother - fear of love withdrawal
22 Coping strategy- support_r
23 Coping strategy - avoidance
24 Internet addiction total score
25 PCG disclosure_r
26 SDQ emotional
27 SDQ conduct
28 SDQ hyperactivity
29 CogNamingTotal
30 CogMathsTotal
31 Confidence in Gardí
32 Confidence in Courts
33 Taken something from shop or store without paying for it
34 Not paid the correct fare on bus or train
35 Behaved badly in public that people complained and you got into troub
36 Deliberately damaged or destroyed property that did not belong to you.
37 Written on things or sprayed paint on things that don't belong to you.
38 Taken money or something else that did not belong to you from home
39 Hit, kicked or punched someone on purpose to hurt or injure them.
40 Purposely hurt or injured a bird or animal.

Factors

ASB

Characteristics of a network of young people who have not come into conflict with the law

1 ACE total
2 Has YP ever had a psychological or emotional condition _r
3 Does YP have general learning disabilities _r
4 How many times in the last 12 months consulted helplines (YP)
5 Household type (Two PCGs, one PCG)
6 Is the YP still in education
7 Age PCG left school for the first time-r
8 YP condition of neighbourhood total_r
9 YP agree or not. This is a safe area
10 YP how well household members get on _r
11 AIRs total_r
12 Value of work
13 Sex equality_r
14 EDS discrimination scores
15 Sexual activity
16 PCG conflict_r
17 PCG unreliability_r
18 YP control_r
19 YP AUDIT total (alcohol consumption).
20 T YP Opposition to authority
21 Mother - fear of love withdrawal
22 Coping strategy- support_r
23 Coping strategy - avoidance
24 Internet addiction total score
25 PCG disclosure_r
26 SDQ emotional
27 SDQ conduct
28 SDQ hyperactivity
29 CogNamingTotal
30 CogMathsTotal
31 Confidence in Gardí
32 Confidence in Courts
33 Taken something from shop or store without paying for it
34 Not paid the correct fare on bus or train
35 Behaved badly in public that people complained and you got into troub
36 Deliberately damaged or destroyed property that did not belong to you.
37 Written on things or sprayed paint on things that don't belong to you.
38 Taken money or something else that did not belong to you from home
39 Hit, kicked or punched someone on purpose to hurt or injure them.
40 Purposely hurt or injured a bird or animal.

Factors

ASB

Note the difference in connections between 20 – opposition to authority for each group.

Characteristics of a network for young people who have come in conflict with the law.

There is a marked difference in the OTO cluster for each group.
For young people who have not come into conflict with the law OTO is not strongly linked to a negative perception of the Gardí. Opposition to authority is marked by hyperactivity and general learning difficulties.

For young people who have come into conflict with the law opposition to authority is marked by similar characteristics but also higher scores on the EDS discrimination scale and lower scores on control.

Lower scores on the AIRs scale were related to negative perception of the young person of their PCGS parenting style and was also related to household type (scores being lower for single PCGG house holds). There was a association between lower AIRs scores and cumulative stressful life events. Higher scores on the AIRs was negatively related to some anti-social behaviours.

There were a large number of factors related to young people coming into contact with the law – many having small to moderate but very significant or significant correlations to that factor.

The comparative network analysis makes manifest the complex dynamics of factors related to young people coming, or not coming, into conflict with the law.

Further avenues for research of this data.

Following factors identified as different for networks such as the contributions of parenting styles, patterns in anti-social behaviours, EDS discrimination scores, education and other indicators of social deprivation across waves may indicate further timepoints and opportunity for intervention.

The relationship between the Adult Identity Resolution Scale and other factors in the young people who have come in conflict with the law warrants further investigation.

Examining networks for males and females may offer insights into differing dynamics of factors by gender.

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