Early Indicators: How Early, and What Indicators?

Early antisocial behaviour is one of the best predictors of later antisocial behaviour, even when the behaviour is measured as early as the preschool years. This was one of the findings of a longitudinal study of 1,037 children (about half boys and half girls) in the Dunedin Multidisciplinary Health and Development Study in New Zealand. This longitudinal study examined the health, development and behaviour of children born in 1972-73 in Dunedin, New Zealand.

The study looked at a number of characteristics of the typical preschool child, measured at ages 3 and 5, to see whether they could be used to predict antisocial behaviour at ages 11 and 15.

It is important to establish the earliest age at which serious problem behaviours can be predicted in order to take preventive measures before such behaviours are firmly established. Therefore a primary goal of the study was to determine whether serious antisocial behaviour at age 11 could be predicted as early as the preschool years.

The second goal was to find out whether the best preschool predictors of behavioural problems at age 11 were also strong predictors of later delinquency at age 15.

Extensive psychological, social and physical data were collected for the children every two years from age 3 to 15.

More than 30 indicators of the children's behaviour and development at ages 3 and 5 were examined, including physical health, cognitive and motor abilities, behavioural problems and language development.

At age 11, the children were assessed for antisocial behaviour, which was established against three criteria.

First, the child, at age 11, had to have the symptoms of antisocial disorders, as determined by diagnostic tests and ratings by parents and teachers.

Second, this disorder had to be present across middle childhood for at least two out of three ages: 9, 11 and 13.

Third, the children had to be pervasively antisocial. This meant that subjects had to be rated in the top 15% on antisocial behaviour scales (the most serious cases) by at least two out of five possible raters: the child, the parent or any of three teachers at the child's age of 9, 11 and 13.

These criteria ensured that only children who displayed the most serious antisocial behaviour were included in the group called "antisocial disordered" or AD. In all, 50 children (5.4% of the sample) met the above criteria and were classified as AD subjects.

The rest of the sample was divided into two other groups: non-disordered (ND) subjects (n=837) and subjects with other diagnoses (OD) (n=37). The latter group included children who had been diagnosed at age 11 as having other disorders such as phobias, depression and anxiety disorders.

All three groups, AD, ND and OD, were compared on measures of preschool characteristics (at ages 3 and 5) and antisocial outcome (at ages 11 and 15). Results Of the 33 measures used to assess the children's health factors, cognitive abilities and behaviour at ages 3 and 5, five variables were found to differentiate antisocial-disordered subjects from the other two groups.

Two of the significant variables were "difficult to manage" and "externalizing behaviours." The difficult-to-manage measure was the mother's response to a simple question when her child was 3 years old: "Has your child been an easy baby or a difficult baby?" Externalizing behaviours (aggression and hyperactivity) were assessed by two research staff who observed the child for about one hour at age 3.

The other three significant variables were the McCarthy Motor Scales, the Draw-A-Man test and the parent's Rutter checklist. The McCarthy Motor Scales measure the child's motor skills, specifically leg co-ordination. The Draw-A-Man test also measures motor skills, specifically perceptual- and visual-motor integration. The Rutter checklist provides the parent's report of problem behaviours at age 5.

Not only did parent-reported behavioural problems at age 5 significantly differentiate between the two disordered groups (antisocial and other), they also significantly differentiated between the group with other disorders and the group with no disorders.

The five preschool variables were then analysed to determine the strength of their ability to predict which children would have antisocial disorders at age 11 and which would not. For this analysis, the non-disordered group and the group with other disorders were combined to form a non-antisocial disordered group. The test was whether the five variables could be used to classify each subject correctly into one of the two groups.

Of all the children, 81% were classified correctly using the five preschool variables. Specifically, about 70% of the antisocial disordered cases and 81 % of the non-antisocial cases were classified correctly. These findings indicate that the five-variable combination had a strong predictive ability.

Of the five variables, parent-reported behavioural problems at age 5 (the Rutter checklist) was the single, most useful variable for prediction. On their own, parent-reported behaviour problems correctly classified 80% of the non-antisocial group and 64% of the antisocial group.

The second stage of the study was to see if the five preschool variables that predicted antisocial behaviour at age 11 could also predict delinquency in adolescence, at age 15. Adolescent delinquents were defined as children who were in the top 25% of most serious self-reported delinquency and who had had at least one contact with police by age 15. According to these criteria, 38 children were classified as delinquent.

The groups defined at age 11, namely the non-disordered group (ND), the group with other disorders (OD) and the antisocial-disordered group (AD), differed significantly in the types of delinquency they reported at age 15. In particular, the OD and AD groups reported having engaged in many more, different, illegal, delinquent acts than the ND group.

These two groups were also more likely to have had at least one contact with the police. For example, by

age 15, almost 33% of the AD group had had at least one police contact. This compares with 19% of the OD group and 10% of ND subjects.

Antisocial subjects were 3.5 times more likely than subjects from either of the other two groups to have had two or more contacts with the police (14% of AD, 3% of OD and 4% of ND).

These findings suggest that children who display stable and pervasive antisocial behaviour at age 11 are at the greatest risk for recidivistic juvenile delinquency by age 15.

Using the five preschool variables, 65% of subjects were correctly classified as being delinquent or non-delinquent at age 15. More specifically, only 55% of eventual delinquents and 67% of eventual non-delinquents were accurately classified. These figures suggest that the usefulness of preschool variables to predict antisocial outcome in adolescence is somewhat limited. Conclusion Early antisocial behaviour appears to be the best predictor of later antisocial behaviour. For at least some children, antisocial behaviour appears early and remains stable.

Although the five preschool variables were useful in predicting antisocial behaviour at age 11, their usefulness at age 15 was limited.

It is important to note, however, that although early antisocial behaviour as a predictor correctly classified a large proportion of eventual antisocial-disordered children, it also tended to overclassify children into this group. Parent-reported problem behaviours at age 5 were used as a tool to classify which children would end up at age 11 with antisocial disorders and which would not. In all, 209 children were predicted to have antisocial disorders. In fact, a much smaller number actually had such behavioural problems at age 11. Almost 85% of these children did not develop stable and pervasive antisocial behaviour.

Put simply, the 209 subjects included almost two thirds of the true antisocial subjects, but they also included a large number of children who did not end up showing serious and pervasive antisocial behaviour. The usefulness of preschool behavioural predictors in selecting children for early intervention may therefore be limited at this time.

J.L. White, T.E. Moffitt, F. Earls, L. Robins and P.A. Silva, "How Early Can We Tell?: Predictors of Childhood Conduct Disorder and Adolescent Delinquency," *Criminology*, 28, 4 (1990): 507-533.