

# Child's behavior not just gene-related: researcher

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(PhysOrg.com) -- The idea that depression and anti-social behavior are primarily influenced by genes passed on from parent to child has been called into question by a unique new study involving offspring born through in-vitro fertilization.

In the study, which has been published in the prestigious international journal *Psychological Medicine*, the role of positive and negative [parenting practices](#) were found to be linked to child [mental health problems](#), specifically depression and aggression.

These results were obtained among a sample of children genetically related to their parents compared to a group of children not genetically related to their parents.

The research was led by Head of the University of Otago's Centre for Research on Children and Families Professor Gordon Harold, and suggests the parenting environment plays a unique role in children's development.

In attempting to establish whether nature (genes) or nurture (the environment) had the greater role to play in these child outcomes, Professor Harold and colleagues from Cardiff University and University College London compared genetically related and genetically unrelated children born to parents using in-vitro fertilization.

The study involved the participation of 1000 families with children aged

4-6 years from the United Kingdom and the United States over a three-year period.

Mothers and fathers completed a questionnaire relating to aspects of family life including economic circumstances, family relationship experiences, including parenting practices, as well as parent and child mental health symptoms.

Parent and child levels of aggression and depression were assessed among genetically related and genetically unrelated parent and child groupings.

“Associations were found between parent and child symptoms of depression and aggression among parents and children who were genetically related, but, crucially, also among parents and children who were not genetically related,” says Professor Harold.

“While common genetic factors such as genes passed on from parents to their biologically related children may explain this association in the first of these groupings, they cannot explain associations in the second grouping as parents and children are not genetically related.

“This suggests that the rearing environment children experience may explain why symptoms are passed on from one generation to the next where common genetic factors cannot account for this transmission process,” he says.

The study further examined the role of mothers and fathers respective positive (warmth) versus negative (hostile) parenting and found that parents who were hostile towards their children promoted increased levels of aggression in children, but not [depression](#).

Neither hostility nor decreased warmth explained the transmission of

depressive symptoms from parent to child, suggesting that some other family environmental factors, such as distressed inter-parental relations, may be important in explaining this specific association.

Professor Harold says these results highlight the fundamental importance of the household environment as a salient influence on children's psychological development and confirm that the way parents behave towards their children matters in relation to how children behave.

“While this conclusion might seem obvious, the unique design feature of this study where genetically-related and genetically-unrelated parent-child groupings may be compared allows the study to counter the idea that common genetic influences serve as the predominant influence on children's behavioral problems,” he says.

“This finding has significant implications for all parents – including those who are not genetically related to their children such as adoptive parents and genetically unrelated parents of IVF children.

“Rather than blame children's behaviour solely on the [genes](#) passed on from a biological parent to a child, look at the environments that children live in to understand better why some children develop behavioral problems while other children do not.”

Provided by University of Otago

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