MedicalXpress

'Orchid children' bloom, wither in response to surroundings

January 31 2011

(PhysOrg.com) -- A UA-led study backs evidence that some children are more susceptible to adverse environmental factors than others. So-called "orchid children" bloom spectacularly in positive environments but often are at risk in poor home life situations.

For many young children, a stable family life is one key factor to avoiding a number of serious health problems.

Bruce Ellis, a professor of family studies and human development at the University of Arizona, and his colleagues found that children who grow up in supportive families are more likely to delay puberty, but only if they "are biologically sensitive to context."

Their findings are published in the latest edition of the journal Development and Psychopathology.

Ellis has coined a term for and written extensively about those children with higher biological reactivity to stress. "Orchid children," as Ellis theorizes, are predisposed to be more susceptible to their environments, for better and for worse.

"Most children survive and even thrive in whatever circumstances they encounter, like dandelions," Ellis said. "Nurtured with quality parenting and programs, orchid children can blossom spectacularly into society's happiest, most productive people. Conversely, given poor parenting and sketchy surroundings, they are at greater risk to end up wrestling with

depression, substance abuse issues and even jail."

In the current study, Ellis, the John and Doris Norton Endowed Chair in Fathers, Parenting and Families at the UA Norton School of Family and Consumer Sciences, predicted that puberty in orchid children, who display heightened biological responses to challenging events, would be especially sensitive to their family experiences while growing up.

He found that orchid children who had higher quality parent-child relationships started puberty later and went through puberty more slowly. In contrast, lower quality parent-child relationships forecast the opposite pattern.

What also emerged from the research was that there were no such effects demonstrated among less context-sensitive children.

"There is a great deal of interest and concern about early puberty because of its links to mental and physical health problems – eating disorders, depression, substance abuse, delinquency, obesity and teenage pregnancy," Ellis said. More evidence implicates childhood stress as a factor that can induce early puberty, but not in everyone."

"Understanding the causes of early puberty is critical for developing effective intervention and prevention strategies for high-risk youth."

Ellis has been investigating for more than a decade how children's early experiences affect how they mature. Certain stressors in and around the family create conditions that speed puberty as well as sexual activity. These stressors include poverty, marital conflict, negativity and coercion in parent-child relationships and a lack of support between parents and children. Ellis contends that children adaptively adjust their sexual development in response to the conditions in which they live.

The current study followed 114 children (67 girls) in Wisconsin from preschool through 9th grade. It measured socioeconomic conditions, marital conflict and supportive versus coercive parenting through interviews with mothers and fathers when the children were in preschool.

Physiological responses to laboratory stressors were assessed in the 1st grade and development of secondary sexual characteristics, such as breast budding in girls, voice changes boys and the growth of body hair was measured from 3rd through 9th grades. Ellis said the data on puberty were obtained from "mother-and child-reports."

"Essentially, the mothers and children were independently shown a series of diagrams depicting different levels of physical development and then selected the diagram that most closely resembled the child," Ellis said.

More information: Ellis, B.J., Shirtcliff, E.A., Boyce, W.T., Deardorff, J., & Essex, M.J. (2011). Quality of early family relationships and the timing and tempo of puberty: Effects depend on biological sensitivity to context. *Development and Psychopathology*, 23, 85-99.

Provided by University of Arizona