Chaotic households undermine children's development of executive functioning through less responsive parenting

by **Beth Ellwood** — December 17, 2021 in **Mental Health**

Children living in chaotic households demonstrate worse executive functioning, according to a study published in *BMC Psychology.* The findings revealed that this effect was partly driven by lower parental responsiveness in chaotic households.

Executive functions begin to develop in early childhood, helping guide children's mental processes, emotions, and behaviors. These functions include inhibition, cognitive flexibility, and working memory. Since these processes are susceptible to environmental influence, it follows that an adverse childhood environment might impact their development.

Study authors Krysta Andrews and her team conducted a study to explore how a chaotic home environment might influence executive functioning among kindergarten-aged children. They also explored the potential role of parental responsiveness, proposing that chaotic households tend to be less conducive to positive parent-child interactions.

"I was interested in this topic because many of us have likely experienced some form of household chaos at some point in our lives. For some, it may be more constant, than others, which can pose a significant challenge for families," explained Andrews, a postdoctoral fellow at McMaster University.

"So, like many in the research community, I have been interested in what the effects of this chaos can be on child outcomes. In particular, I was focused on executive functions because they are rapidly developing during childhood and can be sensitive to environmental threats such as chaotic homes. I wanted to get a comprehensive look at the state of the literature examining the connection between household chaos and child executive functioning."

A final sample of 128 children and their mothers participated in the study. The children were an average age of five, and most (88%) mothers were either married or in common-law relationships. During two-hour home visits, mothers completed various questionnaires concerning the level of chaos in their home, the amount of times their child had moved in the past year, changes in their relationship status (e.g., divorce, remarriage), and their own depressive symptoms. Both mothers and children completed a battery of tasks measuring various aspects of executive functioning — attention/inhibition, cognitive flexibility, and working memory. The mothers were also filmed while they gave tours of their homes and while they interacted with their children.

Researchers then coded the transcripts of the home tours for word frequency counts related to disorganization and instability, two dimensions of household chaos. They also coded the mothers' behavior as they interacted with their children, scoring them on parental responsiveness.

It was found that parental responsiveness was positively associated with children's scores for each executive function task. Household chaos — a composite score that took into account mothers' questionnaire responses and word frequency counts from the home tours — was negatively associated with parental responsiveness. Next, it was found that household chaos was linked to children's

executive functioning, through mothers' responsiveness. Specifically, children from more chaotic homes had less responsive mothers, and in turn, lower executive functioning.

When the researchers analyzed the two dimensions of household chaos separately, they found that household instability, but not household disorganization, was negatively tied to children's performance on the executive function tasks both on its own and through parental responsiveness. An unstable home may be particularly impactful because it requires parents to adjust to a changing environment, leaving them with less energy and focus to engage in supportive interactions with their children. The study authors suggest that an unstable household might also lead children to withdraw or feel helpless, which can limit their chances of receiving the positive interactions needed to nourish executive functioning.

"An important takeaway from our study is that there is evidence that household chaos is linked to lower executive functioning in children. This can make it difficult for children to regulate their emotions, stay focused on tasks and make decisions; which has implications for their academic success and ability to socialize with their peers," Andrews told PsyPost.

"However, we also saw from our study and other emerging research that establishing regular family routines (e.g., bedtime, mealtime) is important as they can help to provide important structure and stability for children."

The researchers noted that a future study should use a longitudinal design to assess causality and to explore the potential cumulative effects of household chaos.

"There are still many questions to be answered within the area of household chaos and child/family outcomes. For example, in our study we noticed that there were not many studies that looked at the effects of household chaos over time," Andrews explained. "This is important because it can give us insight the stability of its effects and whether there are certain developmental periods that are particularly vulnerable to one or more aspects of household chaos. It can also help us to identify certain factors that may buffer against the effects of chaos on child executive functioning (e.g., positive parenting practices). This is one of many questions that research studies are still exploring."

"Research into household chaos and its effects on children and their families continues to grow," Andrews added. "It is pertinent to informing future programs tailored to supporting the individual needs of families, promoting greater stability and order within the home, and fostering healthy developmental trajectories for children."

The study, "Effects of household chaos and parental responsiveness on child executive functions: a novel, multi-method approach", was authored by Krysta Andrews, James R. Dunn, Heather Prime, Eric Duku, Leslie Atkinson, Ashwini Tiwari, and Andrea Gonzalez.

From BMC Public Health:

Household chaos, characterized by high levels of confusion, disorganization and hurriedness in the home, is increasingly recognized as an important risk factor for adverse child outcomes. Early research on household chaos and child well-being was largely within the field of developmental

psychology, where greater levels of household chaos has been associated with greater behavioral, attention and learning problems in young children. The potential influence of household chaos on child health behaviors is more recently gaining attention within public health.