

Home Chaos and Self-Regulation: Moderating Role of Gender between Home Chaos and Effortful Control

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Abstract

Objective: To explore the relationship between home chaos and Self-regulation (effortful control) among young children including other dimensions of temperament (Surgency and Negative affect).

Place and Duration of the Study: The study was conducted from January 2015 to September 2016 in Rawalpindi.

Materials and Methods: This is a descriptive correlational study. The sample consisted of 100 children (3-7 years) and their mothers. The sample was selected from different private and government schools. For children who were less than 4 years, the mothers were contacted at their homes directly. A purposive sampling technique was used to collect data. To assess temperament and home chaos Children's Behavior Questionnaire Very Short Form (CBQ) and Confusion, Hubbub, and Order Scale (CHAOS)-Urdu Version were used respectively. To collect demographic information for sample selection according to sampling criteria the forms were sent to parents through children.

Results: The results showed significant negative association between home chaos and children's effortful control ($\beta = -.21^*$, $p < .05$), non-significant positive association between home chaos, negative affect ($\beta = .06$, $p > .05$) and surgency ($\beta = -.16$, $p > .05$). Home chaos was also found to be a significant predictor of effort among children. In addition, it was found that gender moderated the relation between home chaos and effortful control. Boys get affected more than girls and show poor effortful control in chaotic homes [$t(96) = 2.39$, $p < .05$].

Conclusion: Home chaos is a significant predictor of effortful control, one dimension of temperament among young children. Boys showed fewer self-regulation skills in chaotic homes as compared to their counterparts.

Keywords: Home Chaos, Temperament, Children's Behavior Questionnaire Very Short Form.

Introduction

A child's development is a life-long process and pertaining to the development and growth of physical, behavioral, cognitive, and emotional traits of a child. During the development phase, various factors are important to consider for instance genetic factors as well as environmental factors. Both these factors are interrelated and equally, influence a child's life.¹

The bio-ecological model of Bronfenbrenner² presents a notion that the environment has a significant influence on a child's social as well as emotional development. This model is comprised of five interlocking environmental systems i.e. Microsystem, Macrosystem, Mesosystem, Exosystem, and Chronosystem. Among these systems, Microsystem has the greatest impact on the child's development. Microsystem constitutes home where child interacts with one or two family members. With time as the child is grown up, the microsystem becomes more complex with the addition of more people with whom the child interacts with such as in a child-care centre or preschool.³

Home chaos is one aspect of children's physical micro-environment and refers to physical and social settings in a microsystem characterized by excessive noise, crowding, lack of routines, uncertainty, unintentional changes, unstructured home, and lack of physical and temporal structures.⁴ Chaotic home environments can produce negative outcomes by affecting the child's behavioral, academic, cognitive, social, and emotional well-being.⁵

Temperament constitutes a set of personality traits that are observable and biologically oriented and influenced by life experiences over time.⁶ Based on these temperamental traits, Thomas and Chess⁷ have categorized children into three temperamental categories i.e. Easy, Difficult, and Slow-to Warm-Up child. Easy children exhibit positive mood and adaptability, having regular patterns of sleeping and eating habits, and calm behavior towards novel situations. Difficult children are tough to handle, have irregular patterns of sleeping and eating habits and experience depressing moods and withdraw from new things due to their non-adaptive nature. Slow-to-warm-up children show negative, irritable, and freakish moods in adjusting themselves to new and novel situations. Although repeated exposure to new situations makes them more adaptable.⁷

Rothbart⁸ also identified three broad dimensions along which temperaments can be aligned namely; (a) Effortful control (b) Surgency/Extraversion, and (c)

Negative affectivity. Effortful control develops late in the first years of life, includes the ability to manage attention and inhibit or activate behavior for adaptation to the environment, especially when the child does not particularly want to do so. These abilities help in the emergence of self-regulatory processes, which enables them to show a difference in their traits and behaviors. Extraversion/Surgency embraces high activity, ecstasy and amused impulsivity, and fruitful keenness. Negative Affectivity includes uneasiness, indignation, downheartedness, agony, and a lack of sooth-ability.⁸ Thomas and Chess⁷ in their "Goodness to fit model" stated that when demands and expectations of people and the environment are in accordance with a child's temperament, they may react towards environmental prompts in a better and appropriate manner. But if there is a conflict among demands and expectations of people and environment are not in accordance with the child's temperament then it leads to negative temperaments and exhibition of undesirable behavioral outcomes. Early temperament characteristics may influence children's early developmental trajectories and future psychopathology.⁹ It has also been shown associated with the academic performance of students. Children with high effortful control, having less coercive parents show better academic grades as compared to their counterparts.¹⁰ Findings also indicate a strong association between home chaos, self-regulation, and effortful control among children.¹¹

Children who are raised in chaotic, unstructured, and poorly-scheduled home environments exhibit detrimental temperamental outcomes and are more susceptible to depression, anxiety, and other adjustment issues as compared to those children who are brought up with supportive, clean, and structured home environments show more positive moods.¹²

Pakistani literature covers various aspects of child development however little has been done to explore the relationship between home chaos and self-regulation among young children.¹³ Durrani, Mehmood, and Saleem¹⁴ have successfully developed a temperament scale but it is for university students. The lack of research studying behavioral styles and temperament among preschool and pre-adolescents and its association with another social and physical microenvironment of children has limited the scope of research. To fill the gap the Child Behavior Questionnaire-very short form was first translated into Urdu language and used in this project. Western findings have shown the negative association between

self-regulation and home chaos¹¹ however the lack of indigenous data regarding the associations between home chaos and dimensions of temperament among preschoolers we made a non-directional hypothesis. Studies from Western culture have shown moderating role (chaos x gender interaction) of gender between chaos and children's adjustment¹⁵, boys being more sensitive to chaotic conditions as compared to girls, however, the available evidence from Pakistan doesn't show the same pattern.¹⁶ Both boys and girls have been shown equally affected by home chaos. However regarding temperament studies have reported gender differences, girls being high in effortful control as compared to boys.¹⁷ Therefore we were interested to study the role of gender as a moderator between home chaos and temperament dimensions.

Materials and Methods

Correlational design was used to study the relation between home chaos and the temperament of young children. The sample consisted of 100 young children (3-7 years) and their mothers. School-going children were contacted in their schools after taking permission from the school administration. Consent forms were sent to mothers to provide permission and demographic information. For children who were not school-going the researcher contacted their mothers directly at their homes. The sample size was decided according to the formula $50+8k$ given by Field (2009)¹⁸ where 'k' is the number of predictors. The sample had only intact families excluding cases of separation or divorced families to avoid possible confounding. The researcher personally approached all the parents at their homes to collect data. The age range of the mothers at the time of testing was 22 - 40 years ($M = 33.1$, $SD = 5.41$) with the education range from 5th grade to 16th grade. The sample consisted of all socioeconomic classes of society i.e. lower class (60%), middle class (30%), and upper class (10%).

Data collection tools: Urdu version¹⁹ of the original Confusion, Hubbub, And Order Scale (CHAOS)²⁰ was used with mothers to assess the level of chaos at home. Items of the home were reversed coded. It is a 15-items forced-choice scale with a true-false format i.e. "there is a very little commotion in our home"; "we almost always seem to be rushed". It was designed to measure confusion, disorganization, and noise in the home environment. To offset response set seven items related to the organization by the simple sum of responses. The total score indicates the extent of home chaos, with a higher score reflecting more

disorganization, confusion, and a noisy home environment. The satisfactory reliability of the translated version was reported as $\alpha = 0.81$. While Cronbach's alpha for the original scale was reported as $\alpha = 0.77$.

Temperament was measured by using the Urdu version of the Children's Behavior Questionnaire (CBQ) Very Short Form²¹. The scale was translated by the researcher according to rules explained by the Brislin²². It was given to two bilinguals to translate in Urdu. Three experts from the psychology discipline selected the best-translated statements. In the next step, the Urdu version was given to two bilinguals for back-translation. In the third step again the experts compared the two versions, original and back-translated, and choose the best translated Urdu statements. Alpha reliability of translated version is $\alpha = 0.58$ whereas for the subscales $\alpha = 0.62$ for Surgency, $\alpha = 0.62$ for Negative affect and $\alpha = 0.63$ for Effortful control.

The scale consists of 36-items and it is informant reported questionnaire assessing the temperament of children (ages 3 - 8). The questionnaire captures three broad dimensions: Surgency/Extraversion, Negative Affectivity, and Effortful Control. This is a 7-point scale with responses (1=extremely untrue of my child to 7=extremely true of my child). Domains Assessed by using CBQ are anxiety, attention problems, hyperactivity, impulsivity, depression, mood, personality traits, risk-taking behavior. Informants were asked to rate their child based on how they feel that their child's reaction is likely to be in a variety of situations. Alpha coefficients for whole scale were $\alpha = 0.60$ and for Surgency, Negative Affect and Effortful Control subscales were $\alpha = 0.75$, $\alpha = 0.72$, and $\alpha = 0.74$.

Data Analysis: Initially descriptive analysis was done. To assess the association between home chaos and temperament dimensions correlation was done.

Results

As preliminary analysis descriptive analysis was done. Correlation among various variables and reliability analysis were also done. On Confusion, Hubbub, And Order Scale, Mean = 4.17 ± 3.38 SD and $\alpha = 0.81$; and on Children's Behavior Questionnaire mean, standard deviations and alpha reliability of subscales of Children's Behavior Questionnaire were; On Surgency/Extraversion, Mean = 50.04 ± 9.24 SD and $\alpha = 0.62$; on Negative Affectivity, Mean = 60.0 ± 9.74 SD and $\alpha = 0.62$; and on Effortful Control, Mean = 67.58 ± 8.76 SD and $\alpha = 0.63$ (Table 1).

We found a significant negative correlation between home chaos and effortful control ($r = -.21^*, p < .05$) and non-significant positive correlation between home chaos and negative affect ($r = .06, p > .05$) and a non-significant negative correlation between home chaos and surgency ($r = -.16, p > .05$). Though the association is not significant however the direction supports the earlier studies. Home chaos leads to less effortful control and high negativity among children.

To test our hypothesis of prediction hierarchal multiple regression was run. It was intended to find out home chaos as a significant predictor of three temperament dimensions among young children. As we got one association significant so hierarchical multiple regression was run only for effortful control as an outcome variable and home chaos as the predictor. We also studied gender moderation between chaos and effortful control. To run hierarchical multiple regression forced entry method was used. At first step: gender of the child was

entered, second step: home chaos scores, and third step: interaction term chaos x gender to find out the moderation effect of gender. The assumptions of independent error in regression (Durbin-Watson = 1.64) and no multicollinearity (VIF values are less than 10) were met (Table 3).

The results showed both home chaos [$t(97) = -2.09, p < .05$] and gender [$t(98) = 3.23, p < .01$] of the children as a significant predictor of effortful control among children. Homes characterized by noise, less structured environments, crowding, and lack of routines lead to poor self-regulation and effortful control among children. In addition, we also found that gender moderated the relation between home chaos and effortful control. Boys get affected more than girls and show poor effortful control in chaotic homes [$t(96) = 2.39, p < .05$]. Though boys are low on effortful control even in low chaotic homes as compared to girls their self-regulation significantly goes more down as chaos increase.

Table 1: Descriptive statistics, alpha reliability and Pearson correlation of variables (N = 100).

Variables	<i>a</i>	<i>M</i>	<i>SD</i>	1	2	3	4
1. Home Chaos	0.81	4.17	3.38	-	-.16	.06	-.21*
2. Surgency/ Extraversion Mother	0.62	50.04	9.24		-		
3. Negative Affectivity Mother	0.62	60.0	9.74			-	
4. Effortful Control Mother	0.63	67.58	8.76				-

* $p < .05$, ** $p < .01$

Table 2: Regression Analysis Predicting Parent-Reported effortful control from CHAOS (N = 100)

Variable	Model I			Model II			Model III			
	<i>B</i>	<i>SEB</i>	β	<i>B</i>	<i>SEB</i>	β	<i>B</i>	<i>SEB</i>	β	
Effortful Control										
Gender	5.42	1.68	.31	5.32	1.65	.31	.55	2.56	.32	
CHAOS				-.51	.24	-	-1.18	.34	-.42	
Chxgen										
R^2							19	1.14	.48	.41
ΔR^2	.31**			.37*			.43*			
	.09**			.14*			.18*			

* $p < .05$ ** $p < .01$

Discussion

The study was conducted to find out the relationship between home chaos and temperament among children. The two most important aspects of the multidimensional environment in which parent-child interaction takes place are the social microsystem (family) and the physical microenvironment of the children.² Environmental chaos is an important aspect of a physical environment that has shown an adverse

impact on temperament and children’s behavioral adjustment. According to findings, children who are raised in unstructured and poorly scheduled home environments show undesirable temperamental outcomes and are more susceptible to depression, anxiety, and other adjustment issues.¹²

For the present study, keeping in view its exploratory nature, we made a non-directional hypothesis, assuming no relationship between home chaos and three dimensions of temperament; surgency, negative affect, and effortful control. It was also intended to

find out home chaos as a significant predictor of temperament among children and whether gender moderates the association between home chaos and temperament among children.

Results indicated significant positive relationship between home chaos and Effortful control ($r = -.21, p < .05$), non-significant positive association between home chaos and negative affect ($r = .06, p > .05$) and non-significant negative association between home chaos and surgency ($r = -.16, p > .05$). The results are in line with earlier researches showing that household characterized by noise, unpredictability, lack of daily routines, and crowding have an adverse effect on children's emotional regulation, focusing ability, and inhibitory control. Effortful control helps children to regulate their emotions. Evidence shows that children with long-term noise exposure are more likely to develop short and long-term attention problems, and show poor emotional regulation skills and social competence.¹⁹

The present findings show a positive association between home chaos and negative affect. The result is not significant however the direction of relation is in line with existing literature; children living in chaotic environments show more anger sadness and less sooth-ability.¹² Moreover chronic exposure to TV is more likely to induce aggression and anxiety/depression and also disrupts children's behavior.²³

Results indicated gender and home chaos as significant predictors of effortful control. The results support the earlier evidence showing that home chaos negatively affects children's effortful control and their emotional regulation. Research has also shown Temperament as a moderator between maternal self-regulation and home chaos.²⁴ We also found gender as a moderator between home chaos and effortful control among young children. Girls showed a high score on effortful control as compared to boys even in low chaotic families, however as chaos increased boys showed poor effortful control as compared to girls.

Limitations

The present study was a part of the student's dissertation therefore the sample was small. A larger sample in the future may lead to more significant results. It is therefore suggested to have a larger sample in the future.

Conclusion

The current study was conducted to explore the relationship of home chaos with three broad dimensions of temperament. It is concluded that the home environment is one important aspect of children's development. Predictability, routines, temporal stability, and lack of noise and crowding in the immediate environment of children facilitate their cognitive and emotional development. Households characterized by lack of routines, noise, and unstructured environment have been found strongly associated with temperamental difficulties, behavioral and emotional problems among children.^{25,28}

Implications

Home chaos has the potential to adversely affect children's adjustment, behavioral, cognitive, emotional, and learning skills.²⁶ The need is to create awareness among parents, teachers, and caregivers in daycare to provide routines and structured environments to their children for optimal development of their cognitive and emotional development. Research has shown that home chaos either directly or indirectly affects not only the mother's self-regulation, responsivity but also children's behavioral and emotional regulation^{24,29} Therefore providing structured and healthy environments at home are necessary to optimize not only the mother's emotional adjustment but in turn children's behavioral adjustment.

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