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EXAMINING THE ASSOCIATION OF TEMPERAMENT AND RESILIENCE IN ELEMENTARY SCHOOL CHILDREN

Dr Abia Nazim[*1], Dr. Uzma Ashiq[2], Dr. Elizabeth Schwaiger[3], Maj. Syeda Masooma Kazmi[4], Dr. Kiran Ishfaq[5], Dr. Ivan Suneel[6]

*[*1,2,3]Associate Professor, Department of Psychology, Forman Christian College University, Lahore*
[4]Psychologist, Pakistan Army
[5]Principal Clinical Psychologist, Jinnah Hospital, Lahore
[6]Professor, Department of Psychology, Forman Christian College University, Lahore

[*1]abianazim@fccollege.edu.pk

ABSTRACT

Given the unique challenges associated with human development, professionals have had an increased interest in both internal and external factors affecting the process of human development, including temperament and resilience. Therefore, current study was conceptualised to study the unique link between temperament and resilience in young children. This descriptive study explored the association of temperament with resilience in 146 children attending elementary grades and were between the age of 5 and 7 years selected through non-probability purposive sampling technique. The sample included both girls and boys, children below the age of 5 and above the age of 7 years and those with significant physical and/or developmental problems were excluded from the sample. Other than a detailed demographic form two questionnaires were used in the study to record information about children's temperament and resilience. For temperament, the Urdu version of the Child Behavior Questionnaire (CBQ) short form was used and Child and Youth Resilience Measure was employed to measure the resilience of participants. The participants scored highest on surgency traits followed by effortful control and negative affectivity. The subdomains within the three dimensions of temperament revealed differing pattern of relationship with resilience. Understanding the association of temperament and resilience can be practically significant in enhancing well being and developing effective behaviour management pragmas.

Keywords: *Temperament Resilience Elementary School Children Adaptation*

INTRODUCTION

The current study focuses on the influence of resilience and temperament especially in relevance to elementary grade children in the Pakistani community. Both temperament (Al-Hendawi, 2013) and resilience (Eley et. al, 2013) are considered complex constructs that play a pertinent role in child development (Allen et al., 2011).

Temperament has been viewed as influencing individual differences among people, and it influences children's interaction as well as adaptability to their environment. Several models of temperament have been studied including the four core models of Thomas and Chess, Buss and Plomin, Goldsmith, and Rothbart, all of which theorized temperament as a multidimensional construct which begins to manifest itself in the younger stages of an individual's life. Fu and Perez-Edgar wrote that all these models emphasized the stability of temperament as a motivating force for behavior, while recognizing that the expression of temperament may vary from time to time and depending upon context (Fountoulakis & Gonda, 2019; Mervielde & De Pauw,2012; Rothbart et al., 2000). Over time, it was clear

that temperament could not be confined within distinct boundaries as different researchers came up with new components that fit into temperamental traits, like behavioral inhibition, activity levels, effortful control to name a few. As the field progressed, researchers invented new concepts and categories for temperament. More integrated models started to appear, with different subcategories within each subscale. One of the pioneering researchers of the field of temperament has been Mary Rothbart. She also proposed a model of temperament which defines three general dimensions including positive reactivity, negative reactivity and self-regulation, these dimensions may change with age and brain development. Rothbart claimed that each dimension is a continuum so having a tendency in one dimension does not determine the child's tendency in the other dimensions. This model has been focused on by many researchers and has achieved more popularity than most other models of temperament. Based on this model, the Child Behavior Questionnaire was constructed by Rothbart and colleagues (2001) for children between the ages of three to seven years.

Contemporary theories on temperament have taken into account the ways in which both internal and external forces operate on an individual in determining his or her temperamental pattern. The internal aspect includes the biological as well as cognitive factors underlying temperament, while the external aspect is linked to the environment. The second variable in present research was of resilience.

Luthar and Cicchetti (2000) defined resilience as a dynamic process of maintaining positive adaptation and effective coping strategies in the face of adversity. Ledesma (2014) noted in her research that most definitions of resilience describe it as individual variations in response to risk. Some people face extreme difficulty in dealing with risks and unexpected adversity. Different disciplines have used the term in various dimensions. For instance, in the field of human development, it is linked with how an individual efficaciously copes with adverse events. In terms of medicine, it focuses on how an individual is able to recognize, acknowledge and tolerate pain, lest it should return to normal. Resilience is also associated with how an individual demonstrates strength and flexibility during the process of change meanwhile letting it cause minimum dysfunction in normal activities. Generally, therefore, it refers to a person's capacity to recuperate from negative life experiences while gaining strength in the attempt to recover.

Different models on resilience have been put forward by researchers as the field progressed (Masten, 2014; Masten, 2018). Looking through research on resilience, it can be seen that much has been studied on its development. Earlier theoretical models focused on how external factors including the institutions of socialization like the family, school, peer group, etc (Fleming & Ledogar, 2008; Lippmann & Schmitz, 2013). contribute to the development of a child's temperamental traits as well as coping mechanisms. This led to improved health as well as social interaction abilities (Masten & Monn, 2015). This conceptualization is in line with the compensatory and protective models that explain that the amalgamation of compassionate affiliations and constructive experiences paired with adaptive skill-building forms the solid foundation of resilience among children (Bernard & Slade, 2009).

Ungar's (2011) ecological model of resilience focused on the interaction between a child and his/her environment; the model implied that if such an interaction is positive it affects overall resilience (Ungar et. al., 2008). Ungar and Leibenberg's(2016) measure of resilience through the Child and Youth Resilience Measure based on this model, including factors based on Ungar's belief that resilience development is a continuous process, which can be affected at a given point in time by a child's interaction with different social contexts, such as cultural and religious. Other findings have also supported this model and provided that the capabilities that underlie resilience are not age-bound, they can be strengthened at any age. Most biological systems of humans are adaptive so it is quite possible to build resilience even after the early years of development have passed (Ungar et. al., 2008). Age-appropriate activities however, promote health by considerably improving a child's ability to recover from stress-causing experiences and help in the development of resilience for the future. It has been seen that children who are more resilient usually have a biological tendency to resist adversity along with strong relationships with important adults in the family and community.

Much previous research indicated that a child's temperament has an impact on his/her resilience (Kim et al., 2013). Resilience and temperament both appear to be a significant component of optimal functioning and wellbeing (Eley et. al, 2013). Tschann et al., (1996) in their research found out that children with difficult temperaments had more behavioral problems as well as social adjustment difficulties as compared to children with easy temperaments. The researches based on contemporary models of temperament revealed that some temperamental traits can aid in increasing children's resilience through at least five possible mechanisms because of which individual differences in

temperament could either increase vulnerability or resilience of a child (Wachs, 2006). The third factor relevant to the present research that he pointed out is related to how children of varying temperaments seek out environments which may increase their resilience. Al-Hendawi (2013) found that children with difficult temperaments might be presented with challenges in adjustment in school environments. Activity levels of children vary as a result of temperament and studies show that activity levels are related to resilience and coping mechanisms of children in the classroom (Carson & Bittner, 1994).

Therefore, the relationship between resilience and temperament has become of interest to researchers because it is still debated whether these two are environmentally influenced or genetically (Torgersen, 1989; Gillespie et. al, 2009). Researchers believe that social institutes such as the family, school and community can strongly influence both, child's temperament and resilience (Luthar & Cicchetti, 2000).

Literature at large had pointed out the importance of temperamental qualities related to emotional reactiveness as well as actions of self-regulation (Scheper et al., 2017) and most of the studies concluded that temperamental traits had have an effect on the behavioral and emotional problems faced by children in their early childhood years (Nigg,2006).

Similarly, researches carried out on young refugee children concluded that higher levels of resilience were closely linked with lower incident rates of stress and other mental health issues even in conflict settings (Panter-Brick et. al., 2018).

The literature found on these topics revealed that although research has been conducted on temperament and resilience, there is little research on its reference to elementary grade children in Pakistan as most of the research was conducted on adolescents and adults. The present research was done in line with the two objectives, to explore the pattern of temperament in elementary school children and to investigate the association between temperament and resilience.

It is expected that the findings of this research would help to understand the dynamic nature of association between these variables in the context of Pakistani children.

METHOD

The study followed correlational research design to assess 146 primary schoolchildren between the age of 5 and 7 years selected through non-probability purposive sampling technique. The sample was taken from primary schools. The sample included both girls and boys, children below the age of 5 and above the age of 7 years and those with significant physical and/or developmental problems were excluded from the sample.

Other than a detailed demographic form two questionnaires were used in the study to record information about children's temperament and resilience. For temperament, the Urdu version of the *Child Behavior Questionnaire (CBQ)* short form was used (Nazim & Khalid, 2016). This is a questionnaire containing 94 items that intends to measure temperament of children under 7 years of age. CBQ items relate to 15 different temperamental traits broadly grouped into three domains including Surgency, Negative affectivity and Effortful control (Putnam & Rothbart, 2006). The Urdu version of CBQ was approved by original authors and has been revealed to have good to excellent psychometric properties, and its validity and reliability indices range from 0.43 to 0.92 (Nazim & Khalid, 2016). Second instrument was *Child and Youth Resilience Measure (CYRM)* to measure the resilience of participants (Ungar and Liebenberg, 2011). The shorter 12 item version of CYRM was used which had shown to have a reliability of 0.75 (Liebenberg et al., 2013). The consent was sorted from the school administration and guardians of the children. The questionnaires were filled by the teachers after, who filled them for each child individually. Since the study focused on minors, parental informed consent was sought to make sure that ethical considerations were not breached. Parents were also provided with the details of the research project and the confidentiality of their child's information. Data was later organized and analysed through SPSS version 23.

Results

Most of the children were of 7 years of age (35 %) followed by those who were 6 years (34%) and 5 years (31%) old with mean age of the participants observed to be 6 ± 0.80 years. Girls were noted to be higher in number (51 %) than boys and studying in elementary grade 1 (49 %) and grade 2 (51%). Most of the children were first born (56 %) and

majority had 2 siblings (30 %). A large majority living in intact families (77%) with both parents living together, whereas most of the participants were living in nuclear family systems (53%).

Table 1.
Descriptive Features of Resilience & Temperament Subscale Scores

Variables	*M ± SD*	*a*
Total CYRM score	28.48 ± 3.16	.83
Activity Level	3.19 ± 1.22	.79
Attentional Focus	2.82 ± 1.61	.81
Soothability	2.91 ± 0.50	.80
Perceptual Sensitivity	3.06 ± 1.21	.82
Impulsivity	3.59 ± 1.13	.79
Anger Frustration	3.17 ± 1.32	.80
Approach Anticipation	4.07 ± 1.44	.82
Discomfort	3.34 ± 1.78	.81
Fear	4.19 ± 1.32	.82
High Intensity Pleasure	3.23 ± 0.06	.79
Low Intensity Pleasure	3.86 ± 1.78	.82
Inhibitory Control	2.79 ± 1.57	.82
Smiling & Laughter	2.50 ± 0.76	.83
Shyness	3.54 ± 1.08	.84
Sadness	3.19 ± 1.98	.83

On Surgency, the mean score of the participants was 4.60±1.29, for effortful control mean score was 3.96± 0.41, whereas the mean score for negative affectivity was 3.0 ± 1.07. From the surgency subscales, the participants scored highest on positive approach anticipation. On effortful control subscales, participants scored highest on low intensity pleasure. On the other hand, from negative affectivity dimension, participants scored highest on fear.

Table 2. ***Correlation between Resilience and Temperament Dimensions.***

Variables	***r***
Activity Level	-.21*
Attention Focus	-.10
Soothability	.38**
Perceptual Sensitivity	-.17
Impulsivity	-.09
Anger Frustration	-.28**
Approach Anticipation	-.17
Discomfort	-.33**
Fear	-.25*
High Intensity Pleasure	-.15
Low Intensity Pleasure	.12
Inhibitory Control	-.17
Smiling	.42**
Shyness	.25*
Sadness	.29**

*p< 0.05 level (2-tailed). **p< 0.01 level (2-tailed).

Various significant correlations were found between the resilience and temperament scores of the participants many of which were significant. Strongest positive association was found between the resilience score of participants and smiling subscale (p = .002) and resilience and the soothability subscale of temperament (p= .000). The strongest inverse correlation was observed between resilience and discomfort (p= .000). Another significant negative correlation was found between resilience scores and anger frustration (p = .02). Apart from this, several significant correlations were found between the subscales of the temperament and resilience.

Table 3. ***Correlation between Resilience and Temperament Dimensions Across Gender.***

	r (Girls)	*r (Boys)*
Surgency	.36**	.18*
Effortful control	.24**	.27**
Negative Affectivity	-.20*	-.25**

Temperament domain surgency and effortful control observed to have positive correlation with resilience, whereas, negative affectivity found to have inverse association with resilience. The relationship between temperament and resilience noted to have the same trend in both genders however, the strength of association was noted to be relatively different.

DISCUSSION

The current study aimed to find a relationship between temperament and resilience in elementary grade students as both constructs are believed to be significant components of development (Werner & Smith, 2001). Temperament and resilience not only help restore functional behaviours but also contribute to the development of psychopathology (Abulizi et al., 2017),across almost all age groups and genders (Kim et al., 2013; Tsigkaropoulou et al., 2024). Therefore, the present study was designed to explore the association of temperamental traits and resilience.

The significant association between most of the temperamental traits and resilience provided better understanding on these dimensions of functioning. In general, high score on surgency and effortful control revealed high scores on resilience, whereas, high negative affectivity subscale scores were associated with low score on resilience which aligned with the inferences drawn in other researches (Echezarraga et al., 2021; Kesebir et al., 2013). The correlation revealed some significant correlations – a positive significant correlation was found between the temperamental trait of Soothability and resilience. Soothability in this study refers to getting relaxed after stressful situations and using different personal and situational factors to control stress and other negative affective experiences. This is backed by previous research such as that by Scheper (2017) which also found that less soothability is correlated with greater frustration, up to the point of (sub) clinical levels of comorbid internalization of problems as well as their externalization. In the current study, the sample did not contain any clinically referred children however the results also showed a relationship between these two variables. So, in accordance with the hypothesis of this study, it may be concluded that resilience is significantly correlated with this temperamental trait in that children who are easy to soothe are more resilient.

The second significant finding that was revealed in the study was the noteworthy positive association between the total resilience score and smiling dimension of temperament. This confirms that children who feel positive emotions and express positive temperamental traits more often are more likely to be able to handle situations of distress in a more effective manner than those who do not experience positive emotions too much (Cummings, 2018). The third significant result which is the inverse association of discomfort, fear and anger frustration with resilience which aligns well with other researches concluding the same direction of association in these variables (Wang et al., 2023). As is the general perception, people who have difficulty controlling anger have more trouble in dealing with a stressful situation. Previous research such as the famous New York Longitudinal Study conducted during 1956 and 1988 has shown that from as young as infancy, children whose traits fall into the 'difficult' temperament category, are slow in adapting to new situations, show high intensity in their behavior, have a negative mood more often than not, and have irregular patterns of work (Thomas et al., 2010). This study backs up the previous research finding and proves that resilience is negatively correlated with anger frustration subcategory of temperament (Singh et al., 2021).

From the present study, the researchers have inferred that the study variables are related in a way that will be helpful to understand association of two important dimensions of one's functioning that directly impact the quality of life.

The results can also be helpful in developing an educational environment that promotes resilience and progressive temperament traits. It may be helpful in designing effective programs for promoting resilience in schools.

The study provided results that will be specifically useful to understand the pertinent dimensions of development and functioning of young children, yet there were some limitations involved like teachers filled the questionnaires and sample was small in size and restricted to a small region. However, due to certain constraints of time and resources, it was not possible to overcome this potential limitation. In future studies, it would prove useful to look into this matter while designing the research such as by, for instance, having the questionnaires filled in by both the teacher and a primary caregiver to improve the internal consistency of the data.

Apart from this, there may be an issue of lack of generalizability because it is possible that since a limited geographical region and small sample was used to obtain the information, having a larger sample and representation from other areas may lead to different results. Also, although this study did take into account different demographics factors, like age and gender of the participants like. It does not account for many other extraneous variables that might have influenced the variables under study and caused an impact on the results. In further research, it would be useful to identify other factors and take them under consideration while designing the study. Additional research carried out on this topic could provide statistically significant results given these limitations are considered and effort is made to overcome them. Additionally, further research into this area may reveal the personal, social and environmental factors affecting the relationship of these two variables.

Conclusion

It may be concluded from the current research that there exists a significant relationship between temperament and resilience which appears early in childhood. Learning the pattern of association between temperament and resilience can be very useful in developing effective management plan for enhancing the adaptive functioning of young children.

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