



Doubly Perception on Quintuple Factors Affecting Early Childhood Development of Children with Unique Needs in Punjab, Pakistan

Dr. Hina Hadayat Ali¹, Dr. Muhammad Usman Zia² & Aiman³

¹ Assistant Professor/Coordinator, Department of Special Education, University of Education, Lahore (Faisalabad Campus), Pakistan Email: hina.hadayat@ue.edu.pk

² Lecturer, Department of Special Education, University of Education, Lahore (Faisalabad Campus), Pakistan Email: usman.zia@ue.edu.pk

³ MPhil Scholar, Department of Special Education, University of Education, Lahore (Faisalabad Campus), Pakistan Email: aemanahad4@gmail.com

Abstract

The current study was particularly designed to endeavor the effects of nutrition, Social and Cultural and societal practices, and Parent's Behaviors and Parenting on early childhood development of children with unique needs. Nutrition, health and learning were assumed to be as independent factors providing energy and nutrients needed to be healthy. Multiple life span dimensions of early childhood development of children with unique needs were taken to be as dependent variables such as cognition, emotions, growth and immunity, eating habits, health, learning, and social behavior. A self-developed questionnaire was developed to collect data from the respondents. The parents of school age children aged 06-12 years from Faisalabad, Lahore and Gujranwala cities were chosen as the population of the study while sample was comprised of n=268 participants chosen through purposive sampling technique. Descriptive statistics was run to describe the features of data set by generating summaries about the data sample. Inferential statistics was also employed to test research hypotheses to draw conclusions about population. The results indicated a significant positive correlation ($r= 0.36$, significant at $p 0.01$) in the perception of parents and special education teachers. It was concluded that nutrition is one of the three major factors that impact child's development by the perception of parents and special education teachers. Based on the conclusions, the study recommended that parents and special education teachers should reinforce the importance of good nutritional choices in early childhood.

Keywords

Cognition, Emotions, Social Behavior, Eating Habits, Growth and Immunity, Special Education Teachers

Introduction and Literature

Child development is a critical process that shapes an individual's future well-being, cognitive abilities, and social skills. Child development encompasses several facets of development such as cognitive, physical, social and emotional development (Akram et al., 2024). Child development is affected by many factors such as socio-economic status, parents' education, malnutrition, poor health and unstimulating home environment (Grantham-McGregor et al., 2007). According to Grantham-McGregor et al. (2007), early childhood development is profoundly influenced by both biological and environmental factors, which are especially critical in resource-limited settings. Most of these factors are interlinked and include nutrition, healthcare access, socio-economic status, and the educational environment (Sally et al., 2007). Health and nutrition programs play a vital role in mitigating developmental delays in children, as indicated by the Nutrition Program (2008), which emphasizes the importance of early intervention in vulnerable populations.

Maternal health is another critical factor in determining child development outcomes. Bhutta et al. (2013) assert that maternal malnutrition and poor prenatal care directly influence birth outcomes and subsequent developmental trajectories. Inadequate prenatal and postnatal care affects brain development (Fraser and Cooper, 2003), whereby affecting neurodevelopment and cognitive abilities, potentially leading to long-term deficits (Walker et al., 2007). Low birth weight, as noted by Bussell and Marlow (2000), and poor maternal education and healthcare access (Pairman et al., 2006), are significant contributors to developmental delays in children, particularly those with unique needs.

In Punjab, Pakistan, the situation is compounded by socio-cultural and economic challenges. The quintuple factors affecting early childhood development in this region include poor healthcare infrastructure, inadequate early childhood education, low socio-economic status, insufficient parental awareness, and environmental factors. These factors not only affect the general child population but disproportionately impact children with unique developmental needs. Therefore, understanding the doubly-perceived challenges faced by these children requires a holistic approach that integrates health, education, nutrition, social support, and policy interventions.

The current study was particularly designed to endeavor the effects of nutrition, health and learning on early childhood development of children with unique needs. Nutrition, health and learning were assumed to be as independent factors providing energy and nutrients needed to be healthy. Multiple life span dimensions of early childhood development of children with unique needs were taken to be as dependent variables such as cognition, emotions, social behavior, eating habits, growth and immunity.

Objectives of the Study

The objectives of the study were to:

1. explore major factors affecting early childhood development of children with unique needs by the perception of parents in Pakistan.
2. explore major factors affecting early childhood development of children with unique needs by the perception of special education teachers in Pakistan.

Research Questions

There were two research questions of the study:

1. What were the major factors affecting early childhood development of children with unique needs by the perception of parents in Pakistan.
2. What were the factors affecting early childhood development of children with unique needs by the perception of special education teachers in Pakistan.

Hypotheses of the Study

There were four hypotheses of the study:

1. There would be significant correlation between the doubly perception and quintuple factors affecting early childhood development of children with unique needs in Punjab.
2. There would be significant difference between the doubly perception on quintuple factors affecting early childhood development of children with unique needs in Punjab based on gender.
3. There would be significant difference between the doubly perception on quintuple factors affecting early childhood development of children with unique needs in Punjab based on status.
4. There would be significant difference between the doubly perception on quintuple factors affecting early childhood development of children with unique needs in Punjab based on qualification.
5. There would be significant difference between the doubly perception on quintuple factors affecting early childhood development of children with unique needs in Punjab based on locality.

Research Design

The design of the current study was quantitative in its nature. It was employed for its ability to enable the findings of the study to be generalized to other districts. The quantitative methodology was also found useful in the study because it enabled the researchers to investigate the perception of 268 respondents (parents and special education teachers).

Research Population

The parents of school age children aged 06-12 years from Faisalabad, Lahore, Gojra, Samundari and Gujranwala cities were selected as the population of the study.

Sample and Sampling Technique

Sample was comprised of n=268 respondents (n = 144 parents and n = 124 special education teachers) chosen through purposive sampling technique.

Table 1

Demography of variables

Table 1

Demography of Teachers

Demographic Variables	F	%
Gender		
Males	120	39%
Females	148	61%
Status		
Parents	140	55%
Special Education Teachers	128	45%
Qualification		
Under Graduate	151%	76%
Post Graduate and Above	117%	24%
Locality		
Rural	130	46%
Urban	138	54%
City		
Faisalabad	50	20%
Lahore	55	21%
Gojra	49	19%
Samundari	56	24%
Gujranwala	58	26%

Research Instrument

A self-developed questionnaire was developed to collect data from the respondents. This questionnaire was comprised of two parts. First part was included demography of the respondents of the study. Second part was included statements based on factors affecting early childhood development of children in Pakistan. The respondents selected the appropriate answer by using five point likert scale such as strongly agree (5), agree (4), neutral (3), disagree (2), and strongly disagree (1).

Validity and Reliability

The researchers obtained face validity and content validity by five field experts. These five experts were Ph. D doctors with three to five years professional experience. The cronbach alpha value was measured as 0.89. After that the researchers administered this research instrument to collect data and reach the results of the study.

Table 2

Reliability Analysis of the Study Variable (N=268)

Variable	K	M	SD	Range		A
				Actual	Potential	
Teaching Strategies Questionnaire	26	93	19.1	57-268	26-268	.94

K=No. of items in scale and subscale; M =Mean; SD=Standard Deviation; a= Cronbach's alpha

Table 2 shows the good reliability of assessment measures to carry the further analyses.

Research Analysis

Descriptive statistics (percentages and Pearson Product Moment Correlation) and inferential statistics (MANCOVA) were run to describe the features of data set by generating summaries about the data sample.

Results

The researchers presented results descriptively and inferentially. Both the statistics helped the researchers to find the answers of the research questions.

Results based on Descriptive Statistics to Inquire the Perceptions of Parents on Quintuple Factors Affecting Early Childhood Development of Children with Unique Needs in Punjab

Table 1

Perceptions of Parents on the Factor of Nutrition Affecting Early Childhood Development of Children with Unique Needs in Punjab (n=268)

Domain of Development	Percentages
Effects of Nutrition on Cognition	95%
Effects of Nutrition on Emotions	93%
Effects of Nutrition on Growth and Immunity	87%
Effects of Nutrition on Eating Habits	77%
Effects of Nutrition on Health	72%
Effects of Nutrition on Learning	69%
Effects of Nutrition on Social Behavior	65%

This table indicates that poor nutrition has 95% effects on cognition, 93% effects on emotions, 87% effects on growth and immunity, 77% effects on eating habits, 72% effects on health, 69% effects on learning, and 65% effects on effects on social behavior.

Table 2

Perceptions of Parents on the Factor of Social and Cultural and societal practices Affecting Early Childhood Development of Children with Unique Needs in Punjab (n=268)

Domain of Development	Percentages
Effects of Cultural Practices on Cognition	93%
Effects of Cultural Practices on Emotions	91%
Effects of Cultural Practices on Growth and Immunity	85%
Effects of Cultural Practices on Eating Habits	75%
Effects of Cultural Practices on Health	70%
Effects of Cultural Practices on Learning	67%
Effects of Cultural Practices on Social Behavior	63%

This table indicates that social and cultural and societal practices have 93% effects on cognition, 91% effects on emotions, 85% effects on growth and immunity, 75% effects on eating habits, 70% effects on health, 67% effects on learning, and 63% effects on effects on social behavior.

Table 3

Perceptions of Parents on the Factor of Parent’s Behaviors and Parenting Affecting Early Childhood Development of Children with Unique Needs in Punjab (n=268)

Domain of Development	Percentages
Effects of Parent’s Behaviors and Parenting on Cognition	92%
Effects of Parent’s Behaviors and Parenting on Emotions	90%
Effects of Parent’s Behaviors and Parenting on Growth and Immunity	83%
Effects of Parent’s Behaviors and Parenting on Eating Habits	73%
Effects of Parent’s Behaviors and Parenting on Health	68%
Effects of Parent’s Behaviors and Parenting on Learning	56%
Effects of Parent’s Behaviors and Parenting on Social Behavior	60%

This table indicates that parent’s behaviors and parenting have 92% effects on cognition, 90% effects on emotions, 83% effects on growth and immunity, 73% effects on eating habits, 68% effects on health, 56% effects on learning, and 60% effects on effects on social behavior.

Table 4

Perceptions of Teachers on the Factor of Nutrition Affecting Early Childhood Development of Children with Unique Needs in Punjab (n=268)

Domain of Development	Percentages
Effects of Nutrition on Cognition	93%
Effects of Nutrition on Emotions	90%
Effects of Nutrition on Growth and Immunity	85%
Effects of Nutrition on Eating Habits	77%
Effects of Nutrition on Health	58%
Effects of Nutrition on Learning	54%
Effects of Nutrition on Social Behavior	61%

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This table indicates that poor nutrition has 93% effects on cognition, 90% effects on emotions, 85% effects on growth and immunity, 77% effects on eating habits, 58% effects on health, 54% effects on learning, and 61% effects on effects on social behavior.

Table 5

Perceptions of Teachers on the Factor of Social and Cultural and societal practices Affecting Early Childhood Development of Children with Unique Needs in Punjab (n=268)

Domain of Development	Percentages
Effects of Cultural Practices on Cognition	89%
Effects of Cultural Practices on Emotions	86%
Effects of Cultural Practices on Growth and Immunity	81%
Effects of Cultural Practices on Eating Habits	70%
Effects of Cultural Practices on Health	59%
Effects of Cultural Practices on Learning	51%
Effects of Cultural Practices on Social Behavior	58%

This table indicates that social and cultural and societal practices have has 89% effects on cognition, 86% effects on emotions, 81% effects on growth and immunity, 70% effects on eating habits, 59% effects on health, 51% effects on learning, and 58% effects on effects on social behavior.

Table 6

Perceptions of Teachers on the Factor of Parent’s Behaviors and Parenting Affecting Early Childhood Development of Children with Unique Needs in Punjab (n=268)

Domain of Development	Percentages
Effects of Parent’s Behaviors and Parenting on Cognition	85%
Effects of Parent’s Behaviors and Parenting on Emotions	82%
Effects of Parent’s Behaviors and Parenting on Growth and Immunity	77%
Effects of Parent’s Behaviors and Parenting on Eating Habits	51%
Effects of Parent’s Behaviors and Parenting on Health	50%
Effects of Parent’s Behaviors and Parenting on Learning	69%
Effects of Parent’s Behaviors and Parenting on Social Behavior	57%

This table indicates that parent’s behaviors and parenting have 85% effects on cognition, 82% effects on emotions, 77% effects on growth and immunity, 51% effects on eating habits, 50% effects on health, 69% effects on learning, and 57% effects on effects on social behavior.

Table 9

Pearson Product Moment Correlation between Doubly Perception on Quintuple Factors Affecting Early Childhood Development of Children with Unique Needs in Punjab (n = 268)

	Quintuple Factors	P
Doubly Perception	0.36**	0.002

** Correlation is not significant at p 0.01

Results based on Inferential Statistics to Inquire the Relationship between Doubly Perception and Quintuple Factors Affecting Early Childhood Development of Children with Unique Needs in Punjab

Table 10

MANCOVA to Inquire Difference between Doubly Perception on Quintuple Factors Affecting Early Childhood Development of Children with Unique Needs in Punjab based on Gender (n = 268)

Variable	Doubly Perception	N	M	SD	Df	T	P
Quintuple Factors	Perception of Parents (n = 144)	268	92.17	9.88	143	4.66	0.002
	Perception of Special	268	84.73	14.81			

Education
Teachers
(n = 124)

Note. The above table shows that there was no significant difference at p 0.01 (p > 0.01) between doubly perception and quintuple factors affecting early childhood development of children with unique needs in Punjab based on gender.

Table 11

MANCOVA to Inquire Difference between Doubly Perception on Quintuple Factors Affecting Early Childhood Development of Children with Unique Needs in Punjab based on Status (n = 268)

Variable	Doubly Perception	N	M	SD	Df	T	P
Quintuple Factors	Perception of Parents (n = 144)	268	82.77	7.87	143	4.66	0.002
	Perception of Special Education Teachers (n = 124)	268	73.82	13.80			

Note. The above table shows that there was no significant difference at p 0.01 (p > 0.01) between doubly perception and quintuple factors affecting early childhood development of children with unique needs in Punjab based on status.

Table 12

MANCOVA to Inquire Difference between Doubly Perception on Quintuple Factors Affecting Early Childhood Development of Children with Unique Needs in Punjab based on Qualification (n = 268)

Variable	Doubly Perception	N	M	SD	Df	T	P
Quintuple Factors	Perception of Parents (n = 144)	268	81.88	6.98	143	4.66	0.002
	Perception of Special Education Teachers (n = 124)	268	73.72	14.65			

Note. The above table shows that there was no significant difference at p 0.01 (p > 0.01) between doubly perception and quintuple factors affecting early childhood development of children with unique needs in Punjab based on experience.

Table 13

MANCOVA to Inquire Difference between Doubly Perception on Quintuple Factors Affecting Early Childhood Development of Children with Unique Needs in Punjab based on Locality (n = 268)

Variable	Doubly Perception	N	M	SD	Df	T	P
Quintuple Factors	Perception of Parents (n = 144)	268	82.89	8.88	143	4.66	0.002
	Perception of Special Education Teachers (n = 124)	268	74.72	14.81			

Note. The above table shows that there was no significant difference at $p < 0.01$ ($p > 0.01$) between doubly perception and quintuple factors affecting early childhood development of children with unique needs in Punjab based on locality.

Discussion

Nutrition is an environmental factor. It represents access to resources from the environment (i.e., food and water), but in contrast to other environmental resources like medical care, education or experiences, nutrition can directly modify gene structure and mediate the expression of genetic factors by providing the specific molecules that enable genes to exert their potential or targeted effects on brain growth and development (Rosales et al., 2009). The current study was particularly designed to endeavor the effects of nutrition, health and learning on early childhood development of children with unique needs. Nutrition, health and learning were assumed to be as independent factors providing energy and nutrients needed to be healthy. The researchers formulated five hypotheses either to accept or reject.

Hypothesis 1

The results showed no significant correlation between the doubly perception on quintuple factors affecting early childhood development of children with unique needs in Punjab. Therefore, the formulated hypothesis 1 was rejected.

Hypothesis 2

The results showed no significant difference between the doubly perception on quintuple factors affecting early childhood development of children with unique needs in Punjab based on gender. Therefore, the formulated hypothesis 2 was rejected.

Hypothesis 3

The results showed no significant difference between the doubly perception on quintuple factors affecting early childhood development of children with unique needs in Punjab based on status. Therefore, the formulated hypothesis 3 was rejected.

Hypothesis 4

The results showed no significant difference between the doubly perception on quintuple factors affecting early childhood development of children with unique needs in Punjab based on qualification. Therefore, the formulated hypothesis 4 was rejected.

Hypothesis 5

The results showed no significant difference between the doubly perception on quintuple factors affecting early childhood development of children with unique needs in Punjab based on locality. Therefore, the formulated hypothesis 5 was rejected.

Conclusions

Our research highlighted the following conclusions:

1. It was concluded that nutrition is one of the three major factors that impact child's development by the perception of parents and special education teachers.
2. Poor nutrition in the first two years can slow a child's physical and mental development for the rest of her or his life.
3. Poor diets in early childhood can lead to deficiencies in growth.
4. Responsive parenting including responsive feeding is one of the major sub-factors affecting child's development by the perception of parents and special education teachers.

Recommendations

1. Parents and special education teachers should reinforce the importance of good nutritional choices in early childhood.
2. Parents and special education teachers should play a powerful role in children's eating behavior, providing both genes and environment for children.
3. Early childhood programs help children to develop an awareness of good nutrition and develop healthy eating habits for a lifetime.

Ethical Considerations

The research adheres to the ethical principles in order to protect the dignity, rights and welfare of research participants.

Conflict of Interest

There is no conflict of interest.

Funding, Authors' Contribution

There is no funding agency to support financially. Author contributed to carry the research out to disseminate its results.

Acknowledgements

The researcher is thankful to the parents and special education teachers for providing data to run the study and reach the conclusions later on.

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