International Journal of Health Sciences and Research
Volume 14; Issue: 7; July 2024
Website: www.ijhsr.org
Original Research Article *ISSN: 2249-9571*

A Pre-Experimental Study to Assess the Effectiveness of Information Booklet on Knowledge Regarding Growth and Development of Infants Among Parents at Selected Rural Area, Udaipur, Rajasthan

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DOI: https://doi.org/10.52403/ijhsr.20240745

ABSTRACT

Background: Infancy is a critical stage marked by rapid physical and cognitive changes. Development involves the emergence of new abilities and capacities, progressing through stages of maturity. Caregivers' understanding of growth and development aids in anticipating and addressing children's needs, detecting deviations from the norm, and facilitating early intervention for developmental issues. Therefore, present study aimed to assess impact of an information booklet on infant growth and development among parents.
Method: This study utilized a quantitative, pre-experimental design to gauge the impact of an information booklet on infant growth and development among parents in Bedwas, Udaipur. The sample comprised 60 parents of children under five from the selected rural area, chosen via non-probability purposive sampling. Data collection involved socio-demographic information and a structured knowledge questionnaire, with analysis conducted using descriptive and inferential statistics.
Results: The pre-test showed that 56.7% had poor knowledge, while 43.3% had average knowledge. In the post-test, 68.3% demonstrated good knowledge, while 31.7% had average knowledge. Mean pre-test knowledge score was 11.20±2.98, and mean post-test score was 21.52±2.50, with a significant mean difference of 10.32 (t=21.29, df=59, p=0.001). The information booklet effectively improved knowledge on infant growth and development. Demographic variables did not show significant associations with knowledge levels among parents.
Conclusion: The study concluded that the information booklet effectively enhanced parents' knowledge on infant growth and development. Understanding these changes prepares caregivers to actively guide early learning, crucial for later development. The findings emphasize the importance of educating mothers on nutrition and infant growth. Implementing educational programs can further enhance mothers' understanding of nutrition's role in infant development.

Key Words: Knowledge, Parents, Infants, developmental milestone, Information Booklet

INTRODUCTION

An infant is a person who develops into a kid, then a teenager, living through the lives of his parents before becoming an adult, a fully realized person with a life and future all his own. This process cannot be stopped by anyone at any time[1].The birth of an infant is an emotional and awe-inspiring event, preparing a newborn for physical and mental growth as a strong adult.[2] Parents prioritize a child's physical and mental health, as it impacts their social and learning development. Consistent, responsive care early in life fosters secure attachments, promoting growth and learning.[1] The evaluation of developmental milestones is required in childcare since tracking a child's growth and development is essential to realizing their full potential[2]. Growth is the physical maturation of the body, characterized by the multiplication of cells and increased intracellular substances, leading to an increase in body size and organs.[1] Recognizing developmental impairments requires an understanding of typical developing patterns; early diagnosis and milestone monitoring are critical components of successful intervention programs. [3] Infancy is a vulnerable period due to rapid physical growth, brain development, and skill acquisition. Development refers to the emergence and expansion of an individual's capacity, with psychomotor functions following progressive sequences including gross, communication, fine, and personal social behavior.[4.] Mothers are vital for children's development. Regular health check-ups in the first year provide guidance for parents to anticipate changes. Recognizing normal and abnormal developmental patterns helps in early detection of disabilities, facilitating prompt referral to intervention programs.[5] As individuals grow, they gain better motor coordination and assertiveness until they become fully autonomous. In India, about 2.1 million children under 5 die annually, ranking 49th with a mortality rate of 76/1000 live births. Assessing child development involves a collaborative effort, with families playing a crucial role. Mothers can observe and report infant milestones to doctors, who may conduct developmental screenings to identify potential delays.[6] Ultimately, it's a collaborative effort between caregivers, healthcare professionals, and the broader community to ensure every child reaches their full potential.

In India, infants make up 2.92% of the population. With 30% being underweight and 1/3 premature, they face higher risks of health issues, including infections. This underscores the urgent need for focused attention on infant health in developing nations like India.

"15,000 children die daily before age five globally, with a 3.9% mortality rate. Despite overall declines, many countries still exceed a 2.5% mortality rate." In 2022, the global infant mortality rate decreased by 2.35%, reaching 26.693 deaths per 1000 live births. India's rate also dropped by 3.74% to 27.695 deaths per 1000 live births. Notably, Rajasthan saw a significant decline from 79 deaths per 1000 live births in 2001 to 32 deaths per 1000 live births in 2020, reflecting improving infant health outcomes over time. India's Infant Mortality Rate (IMR) is 34/1000 live births/year, far higher than in countries like Japan and Sweden.[7] Over 200 million children under 5 in developing nations don't reach their full potential due to both biological and family environment factors. Identifying risks early and intervening promptly can greatly enhance their development.[8]

Understanding developmental milestones is vital for assessing child development. Educating postnatal mothers about these milestones enables them to monitor their child's progress and detect any delays early on.[4]

A majority of mothers, regardless of age, were incorrect in their assessment of when key infant abilities occur. [9]

STATEMENT OF THE PROBLEM

“A Pre-Experimental Study To Assess The Effectiveness Of Information Booklet On

Knowledge Regarding Growth And Development Of Infants Among Parents At Selected Rural Area, Udaipur, Rajasthan"

OBJECTIVES OF STUDY

1. To assess the pre-test and post-test level of knowledge regarding growth and development of infants among parents
2. To compare the pre-test and post-test level of knowledge regarding growth and development of infants among parents
3. To find out the association between pre-test level of knowledge regarding growth and development of infants among parents with selected demographic variables.

HYPOTHESES OF THE STUDY

H_1: There will be a significant difference between pre-test and post-test level of knowledge regarding growth and development of infants among parents at 0.05 level of significance.

H_2: There will be a significant association between knowledge regarding growth and development of infants among parents and selected demographic variables at 0.05 level of significance.

RESEARCH METHODOLOGY

Research approach-Quantitative research approach

Research design -pre-experimental research design

Variables under study

Dependent variable: Knowledge of parents regarding Growth &development of infants

Independent variable: Information booklet on growth &development of infants.

Socio-demographic variables: Relation with child, Age of mother (in years), educational status of father, educational status of mother, Monthly family income (Rs), Type of family, No. of children, Source of information.

Research settings

Vill. - Bedwas, Udaipur.

Population

Parents of under 5 child who fulfills the inclusive criteria.

Sample and sampling technique

Convenience sampling technique. A total sample of 60 parents were selected for the study.

SAMPLING CRITERIA

Inclusion criteria

- Parents who are available at the time of data collection.
- Parents who are co-operative.
- Parents who have under five children
- Parents who understand & read of Hindi & English language.

Exclusion criteria.

- Parents who are not co-operative.
- Parents who are not willing to participate in the study.

DESCRIPTION OF THE TOOL

Part-A: Socio Demographic Profile to collect personal information of the parents. It includes Relation with child, Age of mother (in years), educational status of father, educational status of mother, Monthly family income (Rs), Type of family, No. of children, Source of information.

Part-B: Self structured knowledge questionnaire on Growth &development of infants.

Scoring Criteria:

The tool consists of 30 questions. Right answer was given 1 score

Wrong answer was given 0 score. Total score was 30.

- Poor Knowledge – 1-10 score
- Average Knowledge – 11-20score
- Good Knowledge – 21-30 score

DESCRIPTION OF INTERVENTION

Information booklet on growth &development of infants which includes Introduction, social development, motor development, language development, sensory development, emotional & personality development, psychosexual development & reflexes.

DATA COLLECTION PROCEDURE

The data collection for the final study was conducted at selected rural area (bedwas), Udaipur. Prior to data collection parents under five children were given instructions about the research topic and informed consent was obtained from the participants.60 parents for the study were selected from rural area by using purposive sampling technique. Pre-test data were collected from parents using structured knowledge questionnaire on growth & development of infants, Information booklet on growth & development of infants was given to parents and after 1 week post-test data were collected.

RESULTS

Table 1: Frequency and Percentage Distribution of Demographic Variables. N=60

S. No	Demographic Variables	Frequency (f)	Percentage (%)
1	Age in years		
	21-25 years	17	28.3
	26-30 years	22	36.7
	31-35 years	15	25
	> 35 years	6	10
2	Educational status father		
	Up to Primary	8	13.3
	Secondary	16	26.7
	Higher secondary	22	36.7
	Graduation and above	14	23.3
3	Educational status mother		
	Up to Primary	11	18.3
	Secondary	19	31.7
	Higher secondary	24	40
	Graduation and above	6	10
4	Occupation of mother		
	Housewife	33	55
	Employed (Private/Govt)	18	30
	Self employed	9	15
5	Monthly family income (Rs).		
	< 10,000	9	15
	10,001-20,000	14	23.3
	20,001-30,000	20	33.4
	> 30,000	17	28.3
6	Type of family		
	Nuclear	34	56.7
	Joint	26	43.3
7	No of children		
	1	25	41.7
	2	31	51.6
	3 and above	4	6.7
8	Source of information		
	Health personnel	45	75
	Family members	7	11.7
	Mass media	2	3.3
	Books /Newspapers	6	10

According to Table 1, the age distribution is: 22 (36.7%) were 26-30 years old, 17 (28.3%) were 21-25 years old, 15 (25%) were 31-35 years old and 6 (10%) were above 35 years old. For husbands' education, 22 (26.7%) had higher secondary education, 16 (26.7%) had secondary education, 14 (23.3%) had graduation or above, and 8 (13.3%) had up to primary education. Regarding mothers' education, 24 (40%) had higher secondary education, 19 (31.7%) had secondary education, 11

(18.3%) had up to primary education, and 6 (10%) had graduation or above. As for mothers' occupation, 33 (55%) were housewives, 18 (30%) were employed, and 9 (15%) were self-employed. In terms of monthly family income, 20 (33.4%) earned Rs 20,001-30,000, 17 (28.3%) earned above Rs 30,000, 14 (23.3%) earned Rs 10,001-20,000, and 9 (15%) earned less than Rs 10,000. Regarding family type, 34 (56.7%) lived in nuclear families and 26 (43.3%) in joint families. For the number of children, 31 (51.6%) had two children, 25 (41.7%) had one child, and 4 (6.7%) had three or more children. As for information sources, 45 (75%) received information from health personnel, 7 (11.7%) from family members, 6 (10%) from books and newspapers, and 2 (3.3%) from mass media.

Table 2: Pre-test and post-test Level of knowledge regarding growth and development of infants among parents N=60

S. No.	Level of knowledge	Pre-test		Post-test	
		F	%	f	%
1	Poor knowledge	34	56.7	0	0
2	Average knowledge	26	43.3	19	31.7
3	Good knowledge	0	0	41	68.3

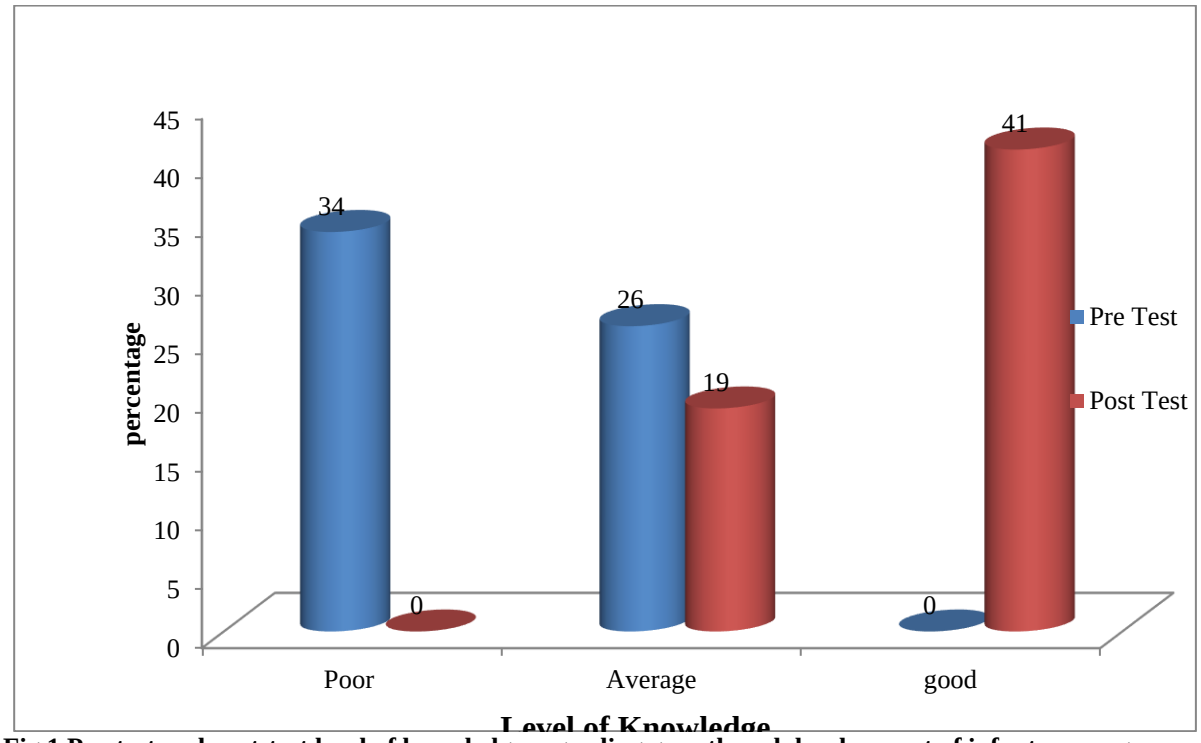

Fig.1 Pre-test and post-test level of knowledge regarding growth and development of infants among parents

Table 2 and fig 1 depicts the pre-test and post-test level of knowledge regarding growth and development of infants among parents reveals that in pre-test majority 34(56.7%) had poor knowledge and 26(43.3%) had average knowledge where as in post-test 41(68.3%) had good knowledge and 19(31.7%) had average knowledge regarding growth and development of infants.

Table 3: Compare the pretest and posttest knowledge regarding growth and development of infants among parents N=60

S.NO	LEVEL OF KNOWLEDGE	Mean	Mean %	SD	Mean D	t value	df	p value
1	Pre-test	11.20	37.33	2.98				
2	Post-test	21.52	71.73	2.50	10.32	21.29	59	0.001*

***p<0.05 level of significance**

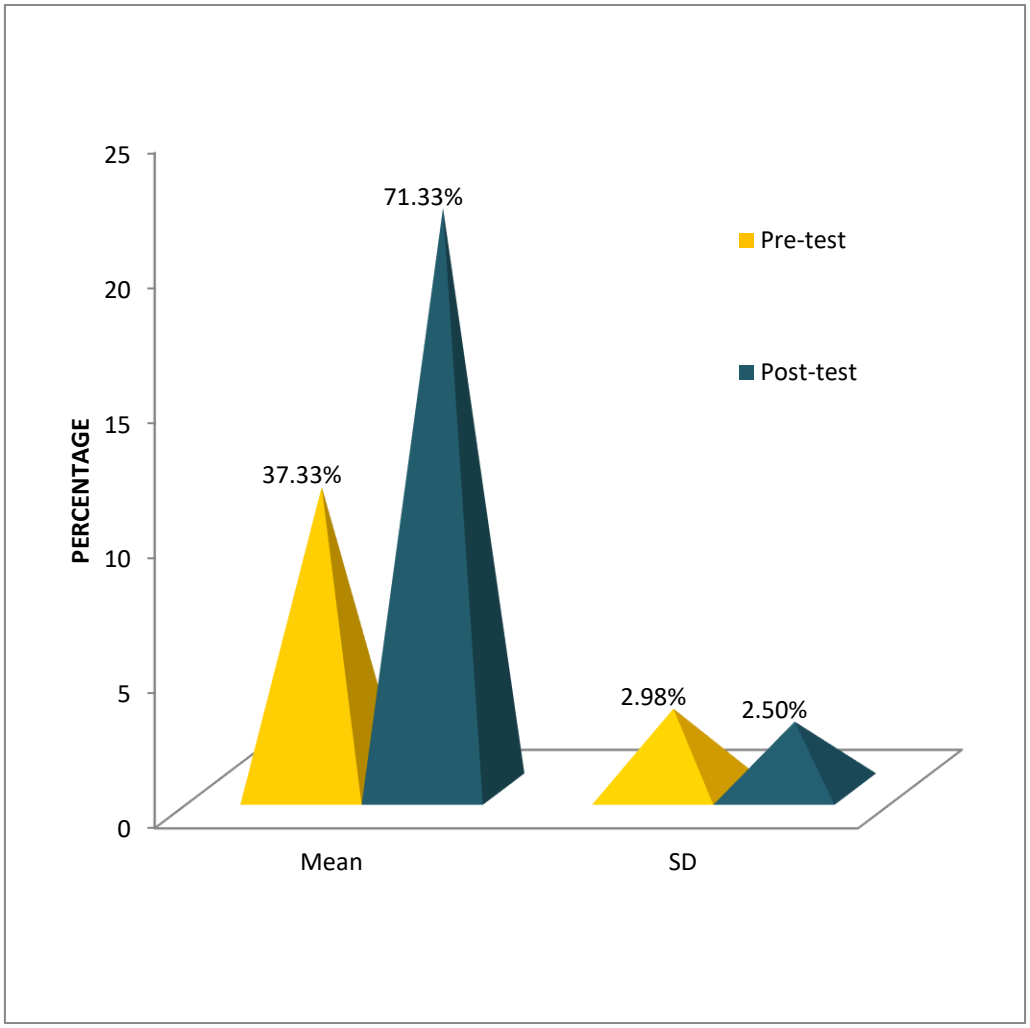

Fig 2: Mean & SD % of pre-test and post-test knowledge score regarding growth and development of infants among parents

Table 3 and Figure 2 compare parents' pretest and posttest knowledge on infant growth and development, using a paired t-test. The mean pretest score was 11.20±2.98, and the mean posttest score was 21.52±2.50, showing a mean difference of 10.32. The results (t=21.29, df=59, p=0.001) were statistically highly significant, indicating that the information booklet effectively improved parents' knowledge.

Table 4: Association between pre-test level of knowledge regarding growth and development of infants among parents with selected demographic variables. N=60

S. No	Demographic Variables	Poor	Average	χ^2value df p value	Significant
1	Age in years 21-25 years 26-30 years 31-35 years	 9 14 8	 8 8 7	 0.708 3 0.871^{NS}	NS

	> 35 years	3	3		
2	Educational status husband Up to Primary Secondary Higher secondary Graduation and above	 6 9 15 4	 2 7 7 10	 6.784 3 0.079^{NS}	 NS
3	Educational status mother Up to Primary Secondary Higher secondary Graduation and above	 6 11 14 3	 5 8 10 3	 0.168 3 0.983^{NS}	 NS
4	Occupation of mother Housewife Employed (Private/Govt) Self employed	 17 11 6	 16 7 3	 0.868 2 0.648^{NS}	 NS
5	Monthly family income (Rs). < 10,000 10,001-20,000 20,001-30,000 > 30,000	 7 9 9 9	 2 5 11 8	 3.169 3 0.366^{NS}	 NS
6	Type of family Nuclear Joint	 19 15	 15 11	0.020 1 0.889^{NS}	 NS
7	No of children 1 2 3 and above	 15 17 2	 10 14 2	 0.228 2 0.892^{NS}	 NS
8	Source of information Health personnel Family members Mass media Books /Newspapers	 24 5 1 4	 21 2 1 2	 1.105 3 0.776^{NS}	 NS

***p value < 0.05 level of significance NS-Non Significant**

Table 4 presents the results of a chi-square test analyzing the association between parents' pre-test knowledge of infant growth and development and various demographic variables. The study found no significant association between the pre-test knowledge levels and the variables: parents' age, husbands' educational status, mothers' education, occupation, monthly family income, type of family, number of children, and source of information.

DISCUSSION

Objective 1: Pre-test and post-test level of knowledge regarding growth and development of infants among parents.

Results showed that before the test, 56.7% had poor knowledge and 43.3% had average knowledge. After the test, 68.3% had good knowledge and 31.7% had average knowledge about infant growth and development.

Study results were congruent with Dr. Anjalatchi (2021) conducted a study In which pre-test among 30 samples was done, 36.7% of mothers had less adequate knowledge, 63.3% had moderately adequate knowledge, and 20% had adequate knowledge. Post-test results after the informational booklet showed 15% with less adequate knowledge, 33.3% with moderately adequate knowledge, and 66.7% with adequate knowledge.[10]

Objective 2: Compare the pretest and posttest knowledge regarding growth and development of infants among parents.

Findings showed that the mean pre-test knowledge score was 11.20±2.98 and the mean post-test knowledge score was 21.52±2.50, with a mean difference of 10.32. The calculated value (t=21.29, df=59,

p=0.001) was statistically highly significant, indicating that the information booklet effectively improved parents' knowledge regarding infant growth and development.

Result supported by Ms. Khushbu Meshram et.al (2017), the pre-test mean knowledge score was 6.93 (SD ±1.83), while the post-test mean was higher at 13.35 (SD ±1.41). The student's paired t-test showed a significant difference of 16.88 at the 0.05% level, indicating that the planned teaching was effective.[11]

Objective 3: Association between pre test knowledge score regarding growth and development of infants among parents with selected demographic variables.

The results indicated no significant association between demographic variables (such as age, husband's educational status, mother's education, occupation, monthly family income, type of family, dietary pattern, number of children, any growth and development problems in children, and source of information) and the pre-test and post-test knowledge levels of parents regarding infant growth and development.

Similar findings also revealed by Tamilarasi. B, the results indicated that there was no significant association between the selected demographic variables such as age, educational status, occupation, income, type of family, number of children with level of knowledge regarding milestone development among mothers of infants.[12]

CONCLUSION

The study showed that pre-test knowledge about infant growth and development was poor in 56.7% and average in 43.3% of participants. Post-test results improved to 68.3% with good knowledge and 31.7% with average knowledge, demonstrating the effectiveness of the information booklet. Understanding infant development helps caregiver's guide early learning, crucial for later stages. The study highlights the need for educational programs to improve mothers' knowledge about nutrition and infant development.

Limitations

The small sample size (60) limited the ability to generalize the findings. Using a structured questionnaire for data collection restricted the information obtained, assessing only knowledge. Due to time and resource limitations, attitudes were not evaluated.

Declaration by Authors

Ethical Approval: Approved

Acknowledgement: None

Source of Funding: Researcher had self-financed the present study.

Conflict of Interest: The authors declare no conflict of interest.

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How to cite this article: Sonika Pujari, Jitendra Pujari, Harish Kumar Kumawat. A pre-experimental study to assess the effectiveness of information booklet on knowledge regarding growth and development of infants among parents at selected rural area, Udaipur, Rajasthan. *Int J Health Sci Res.* 2024; 14(7):345-353. DOI: *10.52403/ijhsr.20240745*

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