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A quasi-experimental study to assess the effectiveness of an educational package on knowledge and attitude regarding sibling rivalry and its prevention among mothers of under 5 children in selected areas of Gurugram

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***Abstract*---**Sibling rivalry denotes the animosity or tension that may arise between brothers and sisters. This phenomenon can manifest in various forms, ranging from typical familial conflicts—such as when children tug at one another's hair or refuse to share a cherished toy, testing the patience of parents everywhere—to more profound and enduring conflicts that may persist into adulthood. In essence, sibling rivalry is a commonplace behavioral response characterized by feelings of jealousy and competition among siblings[1]. **Objective:** Assess the effectiveness of educational package on knowledge and

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attitude regarding sibling rivalry and its prevention among mothers of under 5 children. **Methods:** The approach utilized for the research study was quantitative approach using a Quasi Experimental Non Equivalent control group before after design. 70 mothers (35 in experimental and 35 in control group) were selected by using purposive sample technique. The data were collected by self structured questionnaire and Likert scale. The data was analyzed by SPSS 30 using descriptive and inferential statistics. **Result:** The intervention group experienced a substantial increase in adequate knowledge (from 2.9% to 42.9%) and a sharp drop in inadequate knowledge (from 48.6% to 2.9%), while the control group showed only minor improvements. Positive attitudes also improved dramatically in the intervention group (strongly agree: 2.9% to 80%), with little change among controls. Statistical tests—paired t-test, Wilcoxon signed rank, and Mann-Whitney U—confirmed highly significant improvements in both knowledge and attitudes for the intervention group ($p < 0.001$), clearly demonstrating the intervention is effectiveness. Socio-demographic variable education was significantly associated with pre test knowledge score of mothers where as attitude was not associated with sociodemographic variables. **Conclusion:** The study results demonstrate that the intervention was highly effective in improving both knowledge and attitudes among participants. The intervention group showed large reductions in inadequate knowledge and substantial gains in correct understanding, with statistically significant results confirmed by paired t-tests, Wilcoxon signed rank tests, and Mann-Whitney U tests. Positive attitudes also improved markedly in the intervention group, while the control group saw minimal changes. Overall, the intervention was significantly more successful than the control condition, with highly significant differences ($p < 0.001$) favoring the intervention group.

Keywords---Sibling rivalry, Educational package, Mothers, effectiveness.

Introduction

Sibling rivalry predominantly manifests during the toddler stage, typically between the ages of one and three years, and can extend up to five years[2].Early childhood embodies a critical developmental phase marked by lively movement and exploration, beginning at the moment a child acquires the ability to walk and extending until they initiate their formal education. Throughout this period, notable advancements in both personality and physical faculties manifest. The development of motor skills occurs in a gradual manner. Children in this age group foster self-regulation and proficiency, develop linguistic abilities, enhance their social interactions, understand societal roles, become increasingly aware of their dependence and independence, and start to refine their self-concept[3].A multitude of factors contributes to sibling rivalry, including competition among siblings—whether between brothers, sisters, or amongst mixed-gender siblings. Key influences include a history of familial discord, such as parental conflicts, the

arrival of a new sibling leading to perceived neglect of the older child, tendencies of an overly cautious child, experiences of ridicule, an overwhelming desire for maternal exclusivity, feelings of inadequacy, and parental behavior marked by rudeness or destructiveness, along with discontent regarding the child's gender or an inability to meet the standards of beauty set by an elder sibling. Furthermore, the order of birth and the style of nurturing each child receives may also significantly impact sibling dynamics[4].

Furthermore, a study conducted by Suresh J. and Chandran N.R. (2020), published in the International Journal of Indian Psychology, emphasize that sibling rivalry constitutes a significant yet frequently underestimated issue within child psychology. The findings of the research reveal that various psychological complications may arise as a consequence of sibling rivalry[5].The role of parents in shaping sibling relationships is significant. Parents are responsible for fostering an environment that supports their children's development and helps them navigate interpersonal differences. By teaching skills such as compromise and self-regulation, parents can mitigate sibling rivalry and promote harmonious relationships. Consistent affection can reduce rivalry, while poor parenting may lead to persistent sibling discord into adulthood, affecting personality. The negative effects of sibling rivalry include physical aggression and verbal hostility[6].

Approximately 10 million toddlers across Asia, out of a total of 401 million, contend with sibling rivalry, as noted in a 2019 assessment conducted by the World Health Organization (WHO). The findings indicate that around one-third (34.6%) of Asian children do not face sibling rivalry, while nearly two-thirds (65.4%) do. Additionally, a UNICEF report underscores that the pivotal age bracket of three to five years constitutes more than half (55%) of all sibling rivalry occurrences. Based on the 2017 population census, Indonesia's populace reached 237.6 million. In 2018, the Central Statistics Agency approximated that 47.2 million individuals, or about 22% of the overall population, were children aged five and younger[7]

Background of Study

The influence of parents on a child's development shapes sibling dynamics and individual experiences. Factors such as age, education, and media exposure affect how parents address sibling rivalry. With accessible mass media, parents can enhance their understanding of managing rivalry through media tools. Regular engagement with educational resources can lead to significant changes in less than a week (Violla, Rahma, 2021).Parents bear the responsibility of cultivating an environment that nurtures their children's development, aiding them in navigating interpersonal differences by fostering essential skills such as negotiation and impulse regulation. A positive approach characterized by equitable affection can significantly alleviate sibling rivalry, while a negative role may adversely affect a child's personality into adulthood.Aggressive behaviors like hitting and verbal insults may arise among siblings (Marhamah & Fidesrinur, 2021).

Parents play a crucial role in addressing sibling rivalry, which may stem from a lack of awareness about the need for positive interactions. A productive way for

parents to assist their children in navigating disputes is by providing thorough education[8].

Need of Study

According to the principles surrounding growth and development, the importance of early childhood is unparalleled when contrasted with later stages: just as a strong foundation is essential for the integrity of a building, conducive conditions during infancy are vital for fostering a child into a healthy adult. Conversely, unfavorable circumstances during this pivotal period can profoundly hinder the subsequent growth and development of the child. Sibling rivalry, which affects the child's personality and overall development, is classified as a behavioral disorder within the F90-F98 segment of the ICD-10 classification endorsed by the World Health Organization.

Research Statement

A quasi-experimental study to assess the effectiveness of educational package on knowledge and attitude regarding sibling rivalry and its prevention among mothers of under 5 children in selected areas of Gurugram".

Objective of The Study

1. To assess the pretest score of knowledge and attitude regarding the prevention of sibling rivalry among mothers of under 5 children.
2. To implement the educational package on knowledge and attitude regarding the prevention of sibling rivalry among mothers of under 5 children
3. To assess the post-test score of knowledge and attitude regarding the prevention of sibling rivalry among mothers of under 5 children.
4. To find out the association between pre test knowledge and attitude score with selected demographic variables.

Assumption

The study assumes that:

1. Mothers may participate in the study wholeheartedly and use the preventive strategies taught in the package.
2. The pamphlet had a take-home message may help the mothers to retain the message for a longer period of time.
3. The educational package may have a positive impact on the child-rearing practices.
4. The educational package will enhance the knowledge and attitude of parent regarding sibling rivalry.

Research Methodology

Research approach and design : A quantitative approach using a Quasi Experimental Non Equivalent control group before after design was used. 70 mothers (35 in experimental and 35 in control group) were selected by using purposive sample technique.The data were collected by self structured questionnaire and Likert scale. The data was analyzed by SPSS 30 using descriptive and inferential statistics.

Research setting
The study was conducted in Kherki Majra and Daultabad villages of sec-102, Gurugram.

Sample size
70 mothers (35 in experimental and 35 in control group) of children under 5 were selected from herki Majra and Daultabad villages respectively.

Sampling technique
Sample were selected by using Non probability purposive sample technique.

Sample selection criteria: The sample selection criteria as follows
Inclusion criteria
1. Mothers who have 2 children under 5 age in selected areas of Gurugram.
2. Mothers willing to participate in the study.

Exclusion criteria
1. Mothers who are not willing to participate in the research study.
2. Mothers whose children have some congenital deformity.

Data Collection Tool: It consists of 3 parts.
SECTION A: It consists of 11 items for receiving information of demographic variables of mothers under 5 children living in Khidki majra and Daultabad village area of Gurgaon Haryana.
SECTION B: Section B consists of 30 knowledge questionnaire regarding sibling rivalry and its prevention.
SECTION C: It is using a Likert scale to assess the Attitude of mothers Regarding Sibling Rivalry Under 5 children.

Ethical Consideration

The Department's research and ethics committees approved the pilot and main studies. The head of the department authorized the study's initiation. Permission for the pilot study and the main study from the respective area of Gurugram. A consent form was developed and given to the guardians of the participating children. Mothers were informed about the research objectives and assured of confidentiality. The process adhered to established professional and ethical standards.

Results

Section A: Frequency and percentage distribution of Socio demographic variable of experimental and control group

Table 1: frequency and percentage distribution of the Socio demographic variable of mothers under 5 children of experimental and control

Demographic Variable		Experimental Group		Control Group	
		f	%	f	%
Age	<=20	1	2.9%	0	0%
	21-25	18	51.4%	5	14.3%
	26-30	12	34.3%	9	25.7%
	>30	4	11.4%	21	60.0%
Religion	Hindu	34	97.1%	34	97.1%
	Muslim	1	2.9%	1	2.9%
	Sikh	0	0 %	0	0 %
	Christian	0	0%	0	0%
Education	Primary	5	14.3%	4	11.3%
	Graduates and above	9	25.7%	3	8.6%
	Higher Secondary	5	14.3%	5	14.3 %
	No Formal Education	4	11.4%	2	5.7 %
	Secondary	12	34.3%	21	60%
Occupation	Daily Wages	2	5.7%	4	0%
	Govt. Job	2	5.7%	3	0%
	Home maker	30	85.7%	29	82.9 %
	Private Job	1	2.9%	6	17.1%
Source of information	Electronic Media	7	20.0%	4	11.4%
	Friends & Relatives	20	57.1%	26	74.3%
	Health Personnel	4	11.4%	4	11.4 %
	Others	4	11.4%	1	2.9 %
Income of family	Less than 10000	17	48.6%	12	34.3%
	10001-20000	14	40.0%	16	45.7%
	20001-30000	4	11.4%	1	2.9%
	30001 and above	0	0%	6	17.1 %
Type of family	Joint Family	26	74.3%	18	48.6%
	Nuclear Family	9	25.7%	17	51.4%
Habitat	Rural	30	85.7%	23	65.7%
	Slum	2	5.7%	1	2.9%
	Urban	3	8.6%	11	31.4 %
Number of children	2	26	74.3%	23	65.7%
	3	7	20.0%	8	22.9%
	3 and above	2	5.7%	4	11.4%
Previous Knowledge about sibling rivalry	Yes	07	20%	10	28.5%
	No	28	80%	25	71.5%
Parenting style	Firm but loving, and encourage their children to be independent within reasonable boundaries	26	74.3%	27	77.1%

	behaviour Provide basic needs for their child, but don't set expectations for social or academic behaviour	4	14.3%	5	14.3%
	Loving but don't exert any control	3	8.6%	2	5.7%
	Rigid rules and demand obedience without considering the child's view.	2	5.7%	1	2.9%

Section B

Table 2 : Comparison of knowledge and attitude of mother in prevention of sibling rivalry under 5 children within and between the experimental and control group

n1+n2=70

	Score	Pre-test (Mean±SD)	Post test (Mean±SD)	Paired t test/ Wilcoxon signed rank test	Mann whitney U Test
EG	**Knowledge Score**	14.94±4.64	23.00±3.73	0.00	271.5
CG	**Knowledge Score**	16.46±4.79	16.94±5.23	0.026 Asymp.Sig(2- tailed)	
EG	**Attitude Score**	57.43±3.76	67.83±3.70	0.00 Asymp.Sig(2-tailed)	132.5
CG	**Attitude Score**	56.37±6.49	57.94±7.50	0.00 Asymp.Sig(2-tailed)	

The table shows that experimental group saw a large and statistically significant increase in their mean knowledge score, which rose from **14.94** to **23.00**. This improvement was confirmed by a paired t-test with a **p-value** of **0.00**, indicating the intervention's strong effect. While the control group also had a small, statistically significant increase from **16.46** to **16.94** (p-value **0.026** using the **Wilcoxon signed-rank test**), the difference in the post-test scores between the two groups was notable. The Mann-Whitney U test yielded a value of **271.5,** confirming a significant difference in post-test knowledge scores that favored the experimental group and validated the effectiveness of the intervention.

Similarly, the experimental group showed a highly significant improvement in their attitude scores, which increased from **57.43 to 67.83.** This change was found to be highly significant (**p-value 0.00**) using the **Wilcoxon signed-rank**

test. The control group also experienced a statistically significant, although relatively minor, increase from **56.37** to **57.94** (p-value **0.00** using the **Wilcoxon signed-rank test**). A Mann-Whitney U test value of **132.5** confirmed a significant difference in post-test attitude scores, with the experimental group showing a greater improvement, thereby demonstrating the intervention's positive impact on attitudes.

Section C: Association between level of knowledge with selected demographic variable.

Table 3: Association of mother's pretest knowledge score to their socio-demographic characteristics

n1+n2=70

Socio demographic characteristics		**Mean**		**df**	**chi-square value**	**P value**
		Above	**Below**			
Age of mother	20 year	1	0	3	1.131	0.770^{NS}
	21-25 years	11	12			
	26-30 year	11	10			
	31 and above	12	13			
Religion	hindu	34	34	2	2.000	0.368^{NS}
	muslim	1	1			
	sikh	0	0			
	christan	0	0			
	thers	0	0			
Education of mother	No formal education	5	1	4	10.966	0.027*
	primary	4	5			
	secondary	12	21			
	Higher secondary	4	6			
	Graduates and above	10	2			
Occupation of mother	homemaker	29	30	3	4.160	0.245^{NS}
	Govt job	0	2			
	Private job	4	3			
	Self employee	0	0			
	Daily wadges	2	0			
Family income per month	<10000	17	12	3	2.929	0.403^{NS}
	Rs 10001-20000	12	18			
	Rs 20001-30000	2	3			
	30001 and above	4	2			
Types of family	nuclear	14	13	1	0.060	0.806^{NS}
	joint	21	22			
	extended	0	0			
Habitat	Urban	7	7	2	0.352	0.839^{NS}
	rural	26	27			
	slum	2	1			
Number of children	2	28	21	3	5.810	0.121^{NS}
	3	5	9			

	3 and above	2	5			
Parenting style	Firm but loving, and encourage their children to be independent within reasonable boundaries.	27	26	3	4.930	0.177^{NS}
	Rigid rules and demand obedience without considering the child's view.	2	1			
	Loving but don't exert any control	4	1			
	Provide basic needs for their child, but don't set expectations for social or academic behavior	2	7			
Information regarding sibling rivalry	Yes	7	10	1	5.410	0.067^{NS}
	No	28	25			
Source of information	Electronic media	1	4	3	10.706	0.219^{NS}
	Friends and relatives	4	5			
	Health personnel	2	0			
	0ther	0	6			

*** = significant NS = Non significant**

There was no significant association between pre-test knowledge scores and most sociodemographic variables, such as age, religion, parents' occupation, family income, family type, habitat, number of children, parenting style, or source of information. However, education level and having prior information about sibling rivalry were both significantly associated with higher pre-test knowledge scores, indicating these factors positively influenced participants' knowledge.

Section D: Association between level of attitude with selected demographic variable.

Table 4: Association of mother's pre-test attitudes score to their socio-demographic characteristics

n1=n2=70

Socio demographic characteristics		**Median**		**df**	**chi-square value**	**P value**
		Above	**Below**			
Age of	20 year	0	1	3	2.095	0.553^{NS}

mother	21-25 years	11	12			
	26-30 year	13	8			
	31 and above	14	11			
Religion	hindu	36	32	1	1.734	0.188^{NS}
	muslim	2	0			
	sikh	0	0			
	christan	0	0			
	Others	0	0			
Education of mother	No formal education	3	3	4	7.952	0.093^{NS}
	primary	8	1			
	secondary	16	17			
	Higher secondary	3	7			
	Graduates and above	8	4			
Occupation of mother	homemaker	31	28	3	5.248	0.154^{NS}
	Govt job	0	2			
	Private job	4	3			
	Self employee	0	0			
	Daily wadges	6	1			
Family income per month per month	<10000	19	10	3	4.378	0.223^{NS}
	Rs 10001-20000	12	18			
	Rs 20001-30000	3	2			
	30001 and above	4	2			
Types of family	nuclear	13	14	1	0.667	0.414^{NS}
	joint	25	18			
	extended	0	0			
Habitat	Urban	10	4	2	2.427	0.297^{NS}
	rural	26	27			
	slum	2	1			
Number of children	2	27	22	3	0.735	0.693^{NS}
	3	7	8			
	3 and above	4	2			
Parenting style	Firm but loving, and encourage their children to be independent within reasonable boundaries.	27	26	3	3.732	0.292^{NS}
	Rigid rules and demand obedience without considering the child's view.	2	1			

	Loving but don't exert any control	2	3			
	Provide basic needs for their child, but don't set expectations for social or academic behavior	6	3			
Information regarding sibling rivalry	Yes	7	10	1	0.034	0.983^{NS}
	No	28	25			
If yes Source of information	Electronic media	1	4	3	4.332	0.826^{NS}
	Friends and relatives	4	5			
	Health personnel	2	0			
	0ther	0	1			

*** = significant NS = Non significant**

There was no significant association between pre-test attitude scores with sociodemographic variables.

Discussion

The intervention group showed a substantial increase in adequate knowledge (2.9% to 42.9%) and positive attitudes (strongly agree: 2.9% to 80%), while the control group showed minimal change. Statistical tests confirmed these improvements were highly significant ($p < 0.001$), demonstrating the intervention's effectiveness. Education was significantly associated with pre-test knowledge, but attitude was not linked to sociodemographic variables. The following study support the present study results. **Pandya U, Ameta D et al. (2024)** evaluate the efficacy of a Planned Teaching Program (PTP) aimed at enhancing knowledge regarding sibling rivalry among parents in a community area, utilizing a pre-experimental design. The mean percentage of pre-test and post-test knowledge scores was 41.55% and 67%, respectively, with a significant mean difference of 8.650 and a 't' value of 26.275 (SD = 3.983), confirming the learning package's effectiveness. **Mondal R (2023)** investigates the effectiveness of an Awareness Programme on sibling rivalry among mothers in a rural community of West Bengal. The mean percentage of pre-test and post-test knowledge scores was 8.96% and 11.317%, respectively, with a mean difference of 2.35 and a 't' value of 12.44 (SD = 1.40, $p < 0.01$), indicating significant improvement in knowledge. **Y C Amar (2020)** assesses the effectiveness of a structured teaching program on parental knowledge regarding sibling rivalry in Udaipur, Rajasthan. The mean percentage of pre-test and post-test knowledge scores was 14.13% and 22.78%, respectively, with a mean difference of 8.650 and a 't' value of 26.275 (SD = 3.983), confirming the effectiveness of the program.

The findings were supported by **Nair B. B. et al. (2016)** in their study on parental knowledge and attitudes regarding sibling rivalry among mothers of children under five. They found that knowledge was not influenced by religion, family structure, or occupation, aligning with the current study. Similarly, **Kasturkar P. R. (2024)** noted a significant correlation between mothers' educational levels and awareness of sibling rivalry. **Chaulagain S. et al. (2016)** also partially supported the present study's findings, indicating no significant association between knowledge and selected demographic variables.

Limitations of the study

1) The educational package is designed to address sibling rivalry and its prevention not other behavioral issues.
2) The follow up period after the educational intervention is limited to short time frame.
3) The study did not gather data on the long-term effects of the intervention, which restricts our understanding of its sustainability and enduring impact.
4) The area of study selected only 2 villages in sec 102 and does not encompass other villages of Gurugram.
5) Assessment of knowledge and attitude is limited to a particular self-structured questionnaire and Likert scale only.
6) One of the limitations of the study was the statistically significant improvement in attitude scores observed even in the control group, despite the absence of any structured intervention. This unexpected change may be attributed to factors such as the Hawthorne effect, where participants alter their responses simply due to the awareness of being part of study.

Recommendation

1) Future studies should include larger sample sizes and diverse populations to improve generalization and to understand the effectiveness of educational interventions across different cultural, socioeconomic, and family backgrounds.
2) Implement longitudinal research to evaluate the sustained impact of educational interventions on sibling rivalry and family dynamics over time, rather than relying solely on immediate post-intervention outcomes.
3) Replicate studies in varied settings such as rural vs. urban areas, different healthcare facilities, and among families with children of different age groups to explore contextual influences on intervention outcomes.
4) Use of integrated approach with qualitative research to explore parental perceptions,experiences, and barriers in managing sibling rivalry, providing deeper insights that can inform the development of more tailored educational materials.
5) Future studies should consider employing more robust control mechanisms, such as wait-list controls or blinding, to mitigate such effects, due to the change in knowledge and attitude even though intervention was not given to control group
6) Digital and Scalable Interventions like develop and test mobile-based educational packages or apps for wider dissemination and accessibility.

Conclusion

The findings of this study demonstrate that the intervention effectively enhanced knowledge and attitudes among participants. The intervention group showed a significant reduction in inadequate knowledge and an increase in adequate knowledge post-intervention, with improvements verified by statistical tests (paired t-test, Wilcoxon signed rank test, and Mann-Whitney test). Positive attitudes also improved in the intervention group, while the control group exhibited minimal changes. The results indicate that the intervention significantly outperformed the control condition, with notable differences ($p < 0.001$) favoring the intervention group. Overall, the intervention proved to be a successful strategy for improving knowledge and attitudes in the target population.

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