

Assess the Effectiveness of Self-Instructional Module on Knowledge and Attitude of Parents Regarding Preparation of First Child on Arrival of Sibling

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Abstract

Background: The arrival of a sibling is a major transition for the first child and may result in behavioral and emotional challenges. Parental knowledge and attitude play a crucial role in preparing the older child and minimizing sibling rivalry.

Objectives: To assess the effectiveness of a self-instructional module on knowledge and attitude of parents regarding preparation of the first child for the arrival of a sibling.

Methods: A pre-experimental one-group pre-test and post-test design was adopted among 100 parents at Pooja Nursing College, Bhandara, Maharashtra, from March 2024 to March 2025. Convenience sampling was used. Data were collected using a structured knowledge questionnaire and an attitude scale. A pre-test was conducted, followed by administration of the self-instructional module, and post-test data were collected after one week. Statistical analysis included descriptive and paired t-test for comparison.

Results: In the pre-test, most parents had poor to average knowledge and neutral attitudes. Post-test findings showed significant improvement, with 68% achieving good knowledge and 63% demonstrating favorable attitudes. Paired t-test revealed a highly significant difference in mean knowledge and attitude scores ($p < 0.001$).

Conclusion: The self-instructional module was effective in enhancing both knowledge and attitudes of parents, suggesting its potential utility in maternal and child health education programs to ease sibling transition.

Keywords: Self-instructional module, Knowledge, Attitude, Sibling rivalry

1. INTRODUCTION

Growing up with or welcoming a younger sibling brings a major transition for the firstborn child(1). This transition to siblinghood often leads to emotional and behavioral changes in the older child, including increased anxiety, sleep disturbances, aggression, withdrawal, and changes in attention span, especially in preschool-aged children.(2) These changes are influenced by family dynamics such as parental sensitivity, the quality of father-child and mother-child relationships, and the age or personality of the firstborn child(2).

Parental knowledge and attitudes play a key role in how smoothly this transition goes. When parents understand what to expect and how to prepare the first child psychologically, emotionally, and behaviorally, they are better able to implement strategies that reduce sibling rivalry, promote healthy adjustment, and preserve wellbeing for both the firstborn and the newborn(3). Studies in India have shown that many parents have only average or limited knowledge about sibling rivalry and preparedness, and their attitudes are sometimes neutral or only moderately positive toward such preparations, indicating need for educational interventions(4).

Self-instructional modules (SIMs) have been used in various health and behaviour-education settings with promising results. For example, SIMs have improved knowledge regarding maternal deprivation syndrome among mothers,(5) management of minor ailments by community health workers, and practices such as breast milk expression and storage among working mothers(5). These interventions typically follow a pre-test/post-test design, showing significant improvements in post-test knowledge and attitude scores compared to baseline.

However, there is a gap in the literature when it comes to using SIMs specifically to prepare parents to help their first child cope with arrival of a sibling, particularly in Indian settings. Assessing the effectiveness of such modules in enhancing both knowledge and attitude among parents could help design better support programs in maternity and child health services. Therefore, in this study carried out at Pooja Nursing College, Bhandara, Maharashtra, between March 2024 and March 2025, we aim to evaluate how effective a self-instructional module is in increasing parental knowledge and shaping positive attitudes about preparing their first child for the arrival of a sibling.

2. MATERIAL AND METHODS

Study Design

This study adopted a pre-experimental one-group pre-test and post-test design to evaluate the effectiveness of a self-instructional module on knowledge and attitude of parents regarding preparation of the first child for the arrival of a sibling.

Study Setting and Duration

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The study was conducted at Pooja Nursing College, Bhandara, Maharashtra, India, over a period of twelve months from March 2024 to March 2025.

Sample Size and Sampling Technique

A total of 100 parents were included in the study. Participants were selected using a convenient sampling technique, considering their accessibility and willingness to participate during the study period.

Inclusion and Exclusion Criteria

Parents having at least one child and expecting the birth of a second child were included. Only those who were able to read and understand the local language or English and who gave informed consent were enrolled. Parents with cognitive impairments or unwilling to participate were excluded.

Development of Tool and Intervention

A structured questionnaire was developed to assess knowledge and a standardized attitude scale was used to measure the parental attitude towards preparation of the first child for the arrival of a sibling. The self-instructional module was designed by the investigators, based on review of literature, expert consultation, and guidelines related to sibling preparation and child psychology. The module contained information on psychological reactions of the first child, strategies to reduce sibling rivalry, parental role in smooth adjustment, and techniques to prepare the child before and after the sibling's arrival.

Data Collection Procedure

Initially, a pre-test was conducted to assess baseline knowledge and attitude of the participants. Following this, the self-instructional module was distributed to all parents with instructions for self-study within a stipulated time. After one week, a post-test was administered using the same tool to evaluate changes in knowledge and attitude.

Data Analysis

The collected data were organized, coded, and entered into Microsoft Excel and analyzed using SPSS software. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to describe demographic variables and baseline characteristics. Inferential statistics such as paired t-test were applied to compare pre-test and post-test knowledge and attitude scores. A p-value of less than 0.05 was considered statistically significant.

Ethical Considerations

Ethical approval for the study was obtained from the Institutional Ethics Committee of Pooja Nursing College, Bhandara. Informed consent was taken from all participants before data collection. Confidentiality and anonymity were maintained throughout the study, and participants were assured that their involvement was voluntary and withdrawal was allowed at any stage without any penalty.

3. RESULTS

The results of the study are presented in this section. A total of 100 parents participated. Findings are organized under demographic profile, pre-test and post-test knowledge scores, pre-test and post-test attitude scores, and statistical comparison of outcomes.

Table 1: Demographic profile of participants

Variable	Category	Frequency (n=100)	Percentage (%)
Age (years)	21–25	18	18.0
	26–30	35	35.0
	31–35	30	30.0
	36 and above	17	17.0
Gender	Male	42	42.0
	Female	58	58.0
Education	Primary	20	20.0
	Secondary	38	38.0
	Graduate	29	29.0
	Postgraduate	13	13.0
Occupation	Homemaker	45	45.0
	Service	30	30.0
	Business	15	15.0

	Others	10	10.0
Family type	Nuclear	63	63.0
	Joint	37	37.0

Table 1 describes the demographic characteristics of the parents, including age, gender, education, occupation, and family type.

Table 2: Distribution of parents according to pre-test knowledge levels

Knowledge level	Score range	Frequency	Percentage (%)
Poor	0–5	41	41.0
Average	6–10	39	39.0
Good	11–15	20	20.0

Table 2 shows the baseline knowledge scores of parents before exposure to the self-instructional module.

Table 3: Distribution of parents according to post-test knowledge levels

Knowledge level	Score range	Frequency	Percentage (%)
Poor	0–5	5	5.0
Average	6–10	27	27.0
Good	11–15	68	68.0

Table 3 presents the knowledge scores of parents after exposure to the self-instructional module.

Table 4: Distribution of parents according to pre-test and post-test attitude levels

Attitude level	Score range	Pre-test Frequency (%)	Post-test Frequency (%)
Unfavorable	20–40	37 (37.0)	9 (9.0)
Neutral	41–60	46 (46.0)	28 (28.0)
Favorable	61–80	17 (17.0)	63 (63.0)

Table 4 compares parental attitude towards preparing the first child for a sibling's arrival before and after exposure to the module.

Table 5: Comparison of pre-test and post-test mean knowledge and attitude scores

Variable	Pre-test Mean $\pm$ SD	Post-test Mean $\pm$ SD	Mean difference	t-value	p-value
Knowledge score	7.25 $\pm$ 2.41	11.84 $\pm$ 2.15	4.59	12.68	<0.001
Attitude score	48.62 $\pm$ 8.54	64.21 $\pm$ 7.96	15.59	10.94	<0.001

Table 5 highlights the mean scores of knowledges and attitude before and after intervention, along with statistical significance.

4. DISCUSSION

This study showed that the self-instructional module (SIM) was effective in improving both knowledge and attitudes of parents regarding preparing the first child for the arrival of a sibling. Prior to the intervention, most parents demonstrated poor to average knowledge, while post-test results revealed a marked shift toward higher knowledge levels. These findings are consistent with earlier studies where educational interventions significantly enhanced parental understanding of sibling rivalry and its prevention(6). Similar improvements in knowledge after SIM exposure were also reported in other areas of child health, such as habit disorders among preschoolers(7). The improvement in scores in our study underscores the utility of structured, self-paced learning materials in bridging parental knowledge gaps.

The study also demonstrated a favorable change in parental attitudes, with a substantial increase in positive attitudes after intervention. This is important, as knowledge alone does not guarantee changes in parental behavior unless it is supported by attitudinal shifts. Previous research conducted at Amrita Institute of Medical Sciences similarly noted that parents often begin with neutral attitudes, but targeted interventions can guide them toward more favorable perceptions. In our context, the SIM appears to have provided reassurance, strategies for managing sibling rivalry, and a better outlook toward preparing the older child, which collectively contributed to this positive shift.

Although the results are encouraging, certain limitations must be noted. The one-group pre-test/post-test design without a control group limits the strength of causal inference. The short duration between pre- and post-tests means that long-term retention of knowledge and attitude change cannot be confirmed. Similar concerns have been raised in other Indian studies that relied on immediate post-test evaluations(8). Nevertheless, the present findings highlight the potential for integrating SIMs into antenatal and community health programs. Future studies with larger, more diverse populations, longer follow-up, and control groups will be valuable to confirm these effects and assess whether improved parental preparedness translates into better adjustment outcomes for the firstborn child.

5. CONCLUSION

The study demonstrated that a self-instructional module was effective in significantly improving both knowledge and attitudes of parents regarding preparation of the first child for the arrival of a sibling. By providing structured, self-paced learning, the module enabled parents to better understand potential challenges and adopt positive strategies to reduce sibling rivalry. Integrating such educational tools into routine maternal and child health programs could strengthen parental preparedness and promote smoother adjustment for families welcoming a new child.

6. FUNDING / SOURCES OF SUPPORT

This research received no external funding

7. CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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