"A STUDY TO ASSESS THE EFFECTIVENESS OF INFORMATION BOOKLET ON KNOWLEDGE REGARDING PREVENTION AND MANAGEMENT OF NUTRITIONAL DEFICIENCIES AMONG SCHOOL GOING CHILDREN OF SELECTED SCHOOLS OF BELAGAVI CITY KARNATAKA."

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Abstract

School-age children are generally quite physically active and grow greatly, but at a slower rate. Everyone needs to eat well, but children especially need to eat well since it is directly related to every element of their growth and development, which will immediately affect how healthy they are as adults. Diet and nutrition are important factors that influence children's health and nutritional status. A child's nutritional status is frequently the outcome of numerous interconnected factors and is impacted by food consumption, both in terms of amount and quality, as well as physical health. Thus, the purpose of this study was to assess the usefulness of an information booklet on the management and prevention of nutritional deficiencies in school-age children attending particular Belagavi, Karnataka, schools.

OBJECTIVES

1. To evaluate school-age children's pre-test knowledge on managing and preventing nutritional deficits.
2. To evaluate school-age children's post-test knowledge on the management and prevention of nutritional deficits.
3. To assess the usefulness of an informational pamphlet on the management and prevention of nutritional deficits for school-age children.
4. To ascertain the relationship between a few demographic factors and the pre-test knowledge of school-age children about managing and preventing nutritional deficits.

Keywords Information pamphlet, awareness, school-age children management and prevention of dietary deficits.

INTRUDUCTION
"The nation's wealth is reflected in the health of its children."

In any nation, children's health is of utmost importance. The population of schoolchildren makes up about one-fifth of the overall population and is the nation's best hope for the future. The school age range is important in terms of nutrition since it is the ideal time to increase nutrient storage in the body in order to prepare for the explosive growth of adolescence[1].

During the school-age children are very much physically active and growth and development is at higher rate. The requirement of nutritional is also important during this period. There are various factors the influence the dietary requirement in these growing children and they are gender, body type, size, and genetic.[2] It has been said that the school age years are the latent time of growth. Growth slows down, and the body progressively transforms. At this point, girls typically outpace boys in terms of distance. The amount of food needed per unit of body weight gradually decreases throughout this time due to the decreased rate of growth [3].

Everyone needs to eat well, but children especially need to eat well since it is directly related to every element of their growth and development, which will immediately affect how healthy they are as adults. A child's nutritional condition is frequently the consequence of numerous interconnected circumstances and is impacted by food

consumption, both in terms of amount and quality, as well as physical health[4.]

One important environmental factor influencing both physical and mental development is nutrition. Research demonstrates that eating a healthy diet improves children's overall health and potential for learning, which in turn improves academic performance. Children and teenagers who develop good eating habits, are urged to exercise, abstain from smoking, and acquire stress management techniques may experience a decrease in the effects of chronic illnesses as adults. Food habits are complicated by nature, and their formation is influenced by a variety of conditioning factors[5.]

Children who attend school experience amazing bodily changes of many types, and their diet plays a crucial role in their development. According to recent studies, feeding a child a healthy diet not only keeps them healthier but also helps them become emotionally more stable and do better in school. Children who are old enough to start school make up a crucial and extremely vulnerable population. Because nutrition has an impact on a child's entire growth, it is imperative to adopt a balanced diet. Numerous medical issues can also be avoided with a healthy diet such as losing weight, getting weak bones, and having degenerative illnesses. Additionally, it will guarantee that the youngster develops physically to the best extent possible [6].

Over the past few decades, children's eating habits have altered; they now consume excessive amounts of fat, particularly saturated fats, and sugar-sweetened beverages. They don't get enough fiber since they don't eat enough fruits or veggies. The majority of students from low-income homes consume less dairy, cheese, meat, fruits, and vegetables. Just 25% of kids eat the appropriate quantity of fruits and vegetables each day [7].

Because the child's body goes through significant changes at this age, the nutrition of these children and adolescents is important. When a person reaches school age, their body mass changes, their skeleton has finished developing, and their neuropsychology [9].

Girls are more likely than boys to suffer from malnutrition, and undernourished girls have been linked to greater rates of morbidity and mortality, poorer academic performance, and food insecurities (19–21). Poverty has been linked to inadequate food security, which can lead to infectious parasite infections and exacerbate childhood malnutrition [10].

METHODOLOGY
The pre-experimental design was used in the study. 100 students provided the data, which was gathered using a simple random sample technique. Utilizing a standardized questionnaire, data was gathered.

MAJOR FINDINGS OF STUDY
The total examination of school-age children's knowledge level revealed that the pre-test knowledge scores were 15.42 (51.4%) with a standard deviation of 3.685, indicating inadequate understanding regarding the prevention and management of nutritional deficiencies. After the information booklet was distributed, the participants' average knowledge scores were 84.53%, or 25.36. The knowledge level of school-age children showed progress, with a standard deviation of 3.555. Of those who took the pretest, 44% had inadequate knowledge and 56% had a moderate grasp. In the post-test, 68% of the subjects had sufficient knowledge on managing and preventing nutritional deficiencies, compared to 32% who had intermediate understanding after receiving the information booklet.

INTERPRETATION AND CONCLUSION:
The study's conclusions demonstrate that school-age children's pre- and post-test knowledge levels differed significantly. This leads one to the conclusion that the information packet is useful in raising school-age children's knowledge levels. The degree of knowledge of school-age children was significantly correlated with certain demographic factors, including the kind of family and information source.

MATERIAL AND METHODS
RESARCH APPROCH
The research approach that was used in the study was evaluative research approach.
RESEARCH OF DESIGN
A modified the pre-experimental design with a single group pre-test and post-test.

GROUP	PRE-TEST	INTERVENTION	POST-TEST
Group of 100 school going children	O_1	X	O_2

O_1: Pre-test understanding of school-age children about managing and preventing dietary deficits.
X: A pamphlet providing information on managing and preventing nutritional deficiencies.
O_2: Post-test understanding of school-age children about managing and preventing dietary deficits.

THE STUDY'S SETTING
The study was conducted at Belagavi Barthes English-Medium High School.

Variables
Independent variable : Information booklet about managing and preventing dietary deficiencies is the independent variable.
Dependent variables: school-age children's awareness of managing and preventing nutritional deficits.

Demographic variables: Age, gender, religion, place of residence, kind of family, income level of the family, and information source are examples of demographic variables.
Population: The study's target group included all students enrolled in school and attending particular Belagavi schools.

SAMPLE
The study's sample was made up of students enrolled in particular Belagavi schools.

Sample Quantity or Size
One hundred school-age children make up the entire sample size for this research.

Method of Sampling
The simple random sample technique was used in this investigation.

Inclusion of Criteria
Children enrolled in school are included in the study.
• Who attend particular schools?
• Who is open to taking part in the research?
• Who is available when the information is being collected?

Criteria for Exclusion
The study does not include youngsters enrolled in school.
• Who are ill.
• Who refuse to take part in the research?

TOOL COLLECTION FOR DATA

Selection of tool
Based on the study's objectives, a structured questionnaire was used.

Development of Tool
To evaluate school-age children's understanding of nutritional deficiency prevention and management, a systematic questionnaire was created.

The instrument was created.
• Following a review of relevant literature.
• In light of the investigator's background.
• By direction and discussion with specialists in the field.
• After consulting the statistician

Description of the tool
Structured knowledge tests with questions covering the following topics.

Section I: Demographic Data
Seven items in this section asked for personal information, including age, gender, religion, place of residence, family type, income, and information source.

Section II: Questionnaires on knowledge
The thirty items on the knowledge questionnaires covered a range of topics, including general facts and the management and prevention of nutritional deficiencies.

There were four answers to each question: three distracting answers and one accurate solution A perfect response was worth one point, whereas a poor response was worth zero. was awarded for an incorrect response. There were 30 items in all, which resulted in a maximum score of 30.

The range of the final score was as follows.
➢ Adequate knowledge: over 75% (23–30 marks)
➢ Moderate Adequate: 50–75 percent (16–22 marks)
➢ Inadequate adequate : under 50% (less than 15 points)

PRE-TEST TOOL
Content validation
Five specialists in the Child Health Nursing section determined the tool's content validity.

Reliability
It was discovered that the 0.86 tool's reliability was determined.

Development of information booklet
Based on the diabetic patients' evaluated learning needs, an information pamphlet was created. The following procedures were used in the creation of the information booklet

1. Made reference to relevant research on children's nutritional inadequacies.

2. Wrote the information booklet's contents.

3. The information booklet's content validity was established.

4. Compiling the information booklet's final draft.

The methods employed in the course of the interview are
Children attending school were made to feel at ease and at ease.
A connection was made.
A consent was obtained.
Knowledge questions about the management and prevention of dietary deficits were given out after demographic data questions.
Presented a post-test and informational pamphlet.
Responses were noted following the timetable.
The questions posed by the subjects were answered at the conclusion of the meeting.

Schedule for Data Analysis
Descriptive and inferential statistical analyses were performed utilizing statistical measures for sorting and analysis.

The outcomes were displayed in the parts that followed.
Section I: Outlines the demographic traits of children enrolled in school.
Section II: School-age children's pre- and post-test knowledge scores, both overall and by region, regarding the management and prevention of nutritional deficiencies.
Section III : Compares the knowledge scores from the pre- and post-tests for children who are enrolled in school.
Section IV : Presents the relationship between several demographic traits and pretest knowledge levels.

Results and Discussion
Utilizing both descriptive and inferential statistics, the gathered data was examined.
The data findings have been completed and arranged in line with the data analysis plan.
These are arranged in the sections that follow.
Section I: outlines the demographic traits of children enrolled in school.
Section II: School-age children's degree of knowledge about managing and preventing nutritional deficits
Section III: Comparing the pre- and post-test knowledge scores of youngsters enrolled in school is the focus of Section III.
Section IV: Pretest knowledge scores and a few chosen demographic factors are correlated.

DEMOGRAPHIC CHRECTRISICS OF SCHOOL GOING CHILDREN

Table 1: shows the distribution of school-age children's frequency and percentage.

N=100

AGE	FREQUENCY	PERCENTAGE
6-8 Years	16	16.0
9-10 Years	40	40.0
11-13 Years	44	44.0
Total-1	**100**	**100**

Table 1: shows that 44% of the participants were in the 11–12 age range, 40% were in the 9–10 age range, and 16% were in the 6–8 age range.
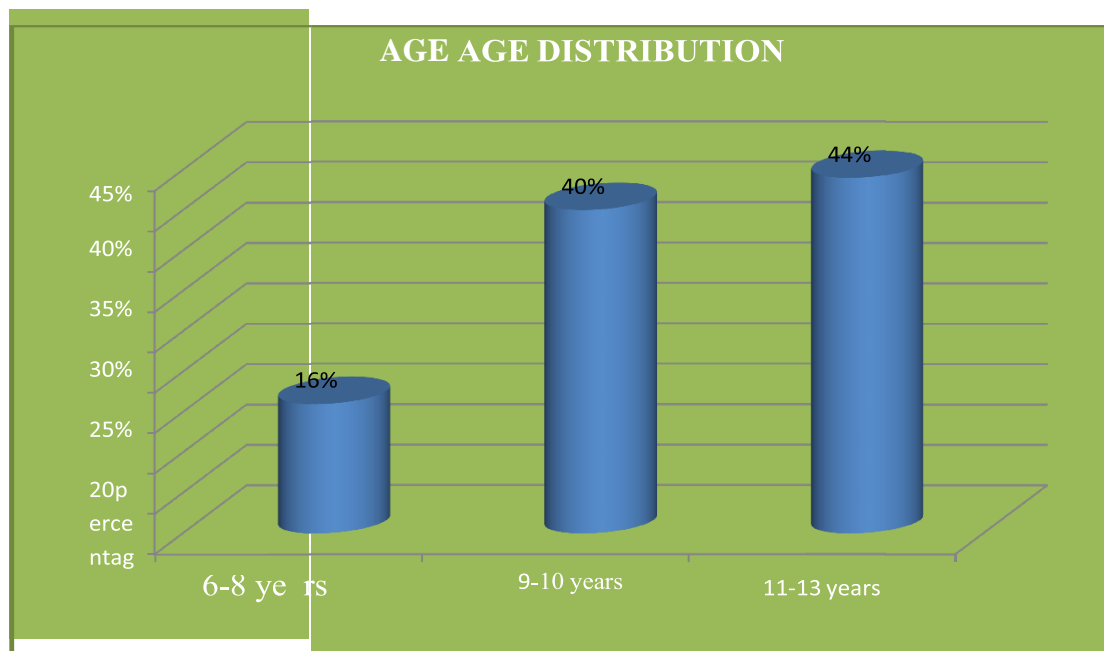

Fig -1: Distribution of age

Table 2: shows the percentage distribution and frequency of school-age children by Gender.

N=100

GENDER	FREQUNCY	PERCENTAGE
Male	48	48.0
Female	52	52.0
Total	100	100

Table 2 reveals that 52% of the subjects were female and 48% of the subjects were male.

Fig 2: Distribution of gender

Table 3: Distribution the percentage and frequency of school-age children by religion.

N=100

RELIGION	FREQUNCY	PERCENTAGE
HINDU	82	82.0
CHRISTAN	10	10.0
MUSALIM	08	08.0
Total	**100**	**100**

Table 3 reveals that 10% of the subjects are Muslims, 8% are Christians, and 82% of the subjects are Hindus.
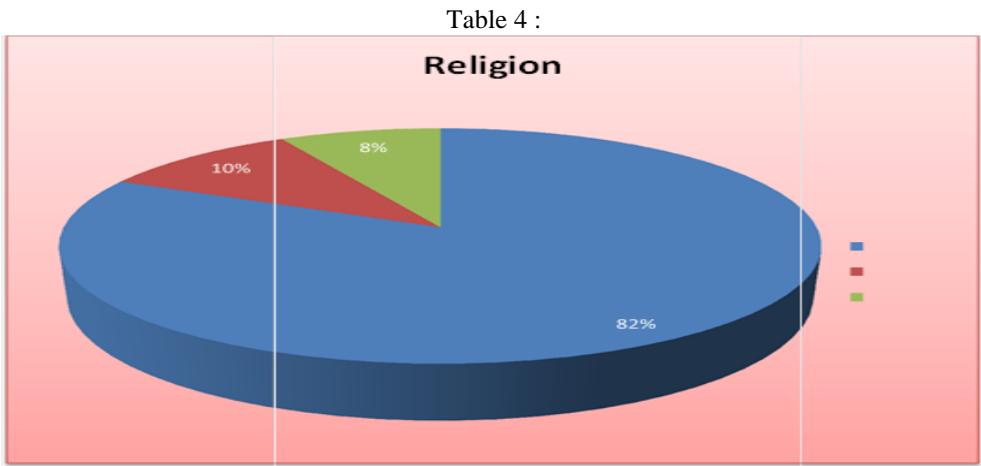
Distribution of Religion

Table 4 :

Table 4: Distribution of school-age children by place of residence, both frequency and percentage.

N=100

4.Place of Residence	Frequency	Percentage
Urban area	34	34.0
Semi urban area	38	38.0
Rural area	28	28.0
Total	100	100

Table 4 : According to of the school-age children, 34% lived in an urban region, 38% in a semi-urban area, and 28% in a rural location .region.
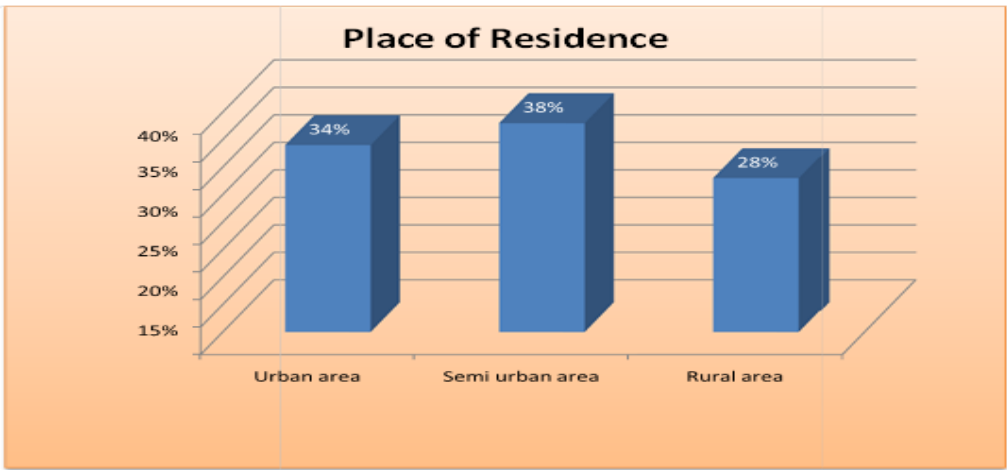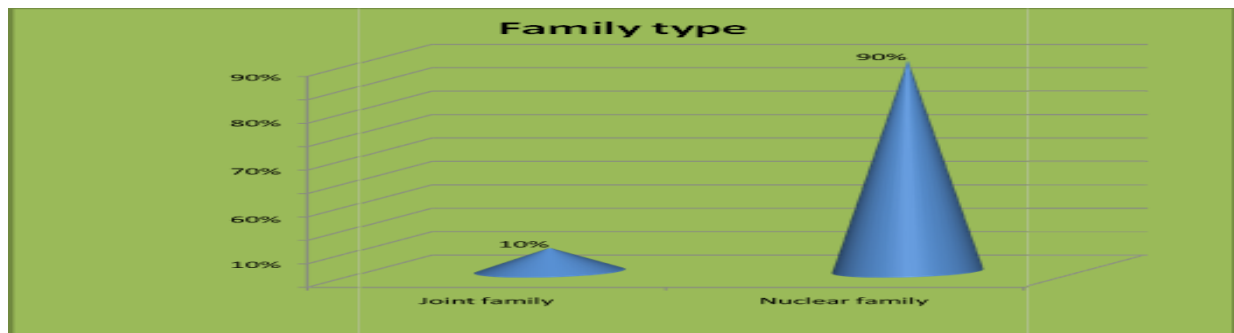

Figure 4: Subject distribution according to residence.

Table 5: Distribution of school-age children by type of family, frequency and percentage
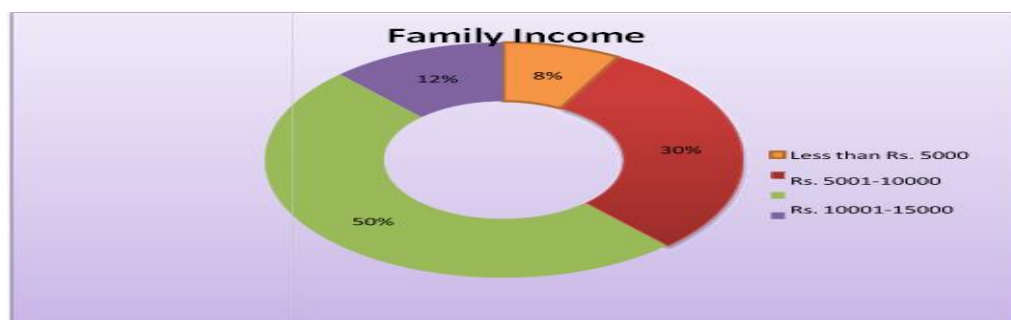
N=100

5. Family type	Frequency	Percentage
a .Joint family	10	10.0
b. Nuclear family	90	90.0
Total-100	**100**	**100**

Table 5 shows that only 10% of individuals lived in a joint family, whereas 90% of subjects were part of a nuclear family.

Figure 5: According to family type subject distribution

Table 6: Distribution of school-age children by household income, frequency and percentage

N=100

6. Family Income	Frequency	Percentage
Less then 5000	8	8.0
5000-10000/-	30	30.0
10000-15000/-	50	50.0
15000 above	12	12.0
Total-1	100	100

According to Table 6, the majority of subjects who were school-age children had family incomes between Rs. 10001 and Rs. 15000, 30% had incomes between Rs. 5001 and Rs. 10,000, 8% had incomes of Rs. 15001 and less than Rs. 5000, and only 12% had incomes greater than.

Figure 6: Subject distribution according to household income

Table 7: Distribution of school-age children by frequency and percentage based on information source.

N=100

7. Source of information	Frequency	Percentage
a. Family/friends	6	6.0
b. Mass media	30	30.0
c. Academics	34	34.0
d. Health personnel	30	30.0
Total	**100**	**100**

According to the table 7, 34% of the subjects obtain their information from their academics, 30% from the mass media, 30% from medical professionals, and only 6% from family and friends.
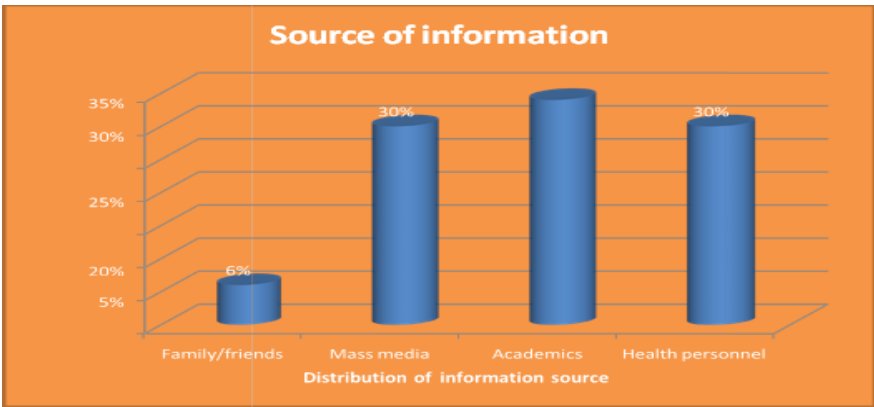
Figure 7: Subject distribution according to current information source.

SECTION II: SCHOOL-AGE CHILDREN'S KNOWLEDGE RELATED TO MANAGEMENT AND PREVENTION OF NUTRITIONAL DEFICIENCIES.

Table 8: shows the overall knowledge results of school-age children on both the pretest and post-test.

KNOWLEDGE	Pre-Test		Post-Test	
	Frequency	Percentage	Frequency	Percentage
Inadequate knowledge	44	44.0	0	0.0
Moderate knowledge	56	56.0	32	32.0
Adequate knowledge	0	0.0	68	68.0
Total	100	100	1001	100

N=100

Table 8 : shows that on the pretest, 56% of the individuals had moderate knowledge and 44% had poor knowledge. 32% of the individuals had a moderate awareness of the prevention and management of nutritional deficiencies, compared to 68% of the subjects who had adequate knowledge in the post-test..
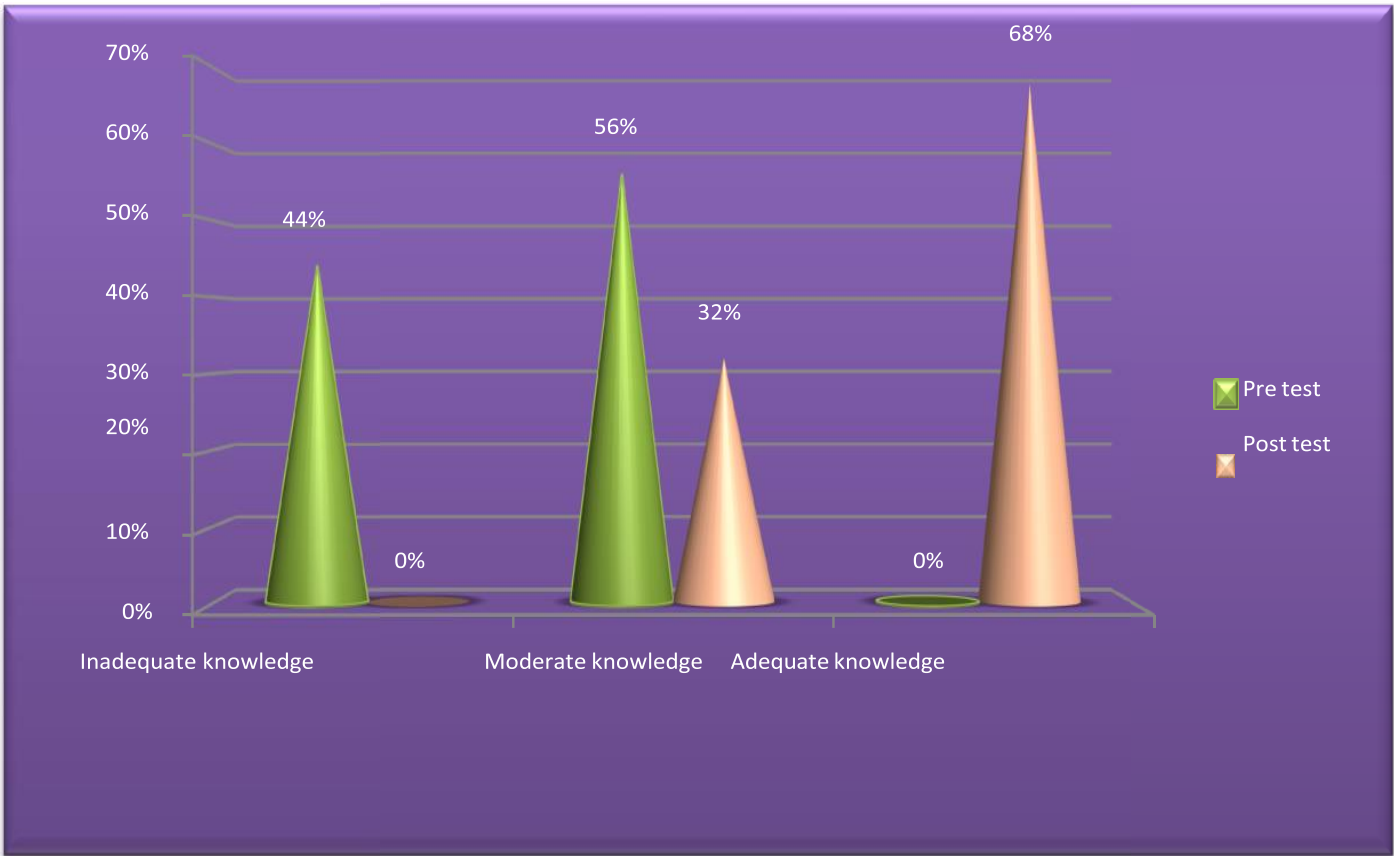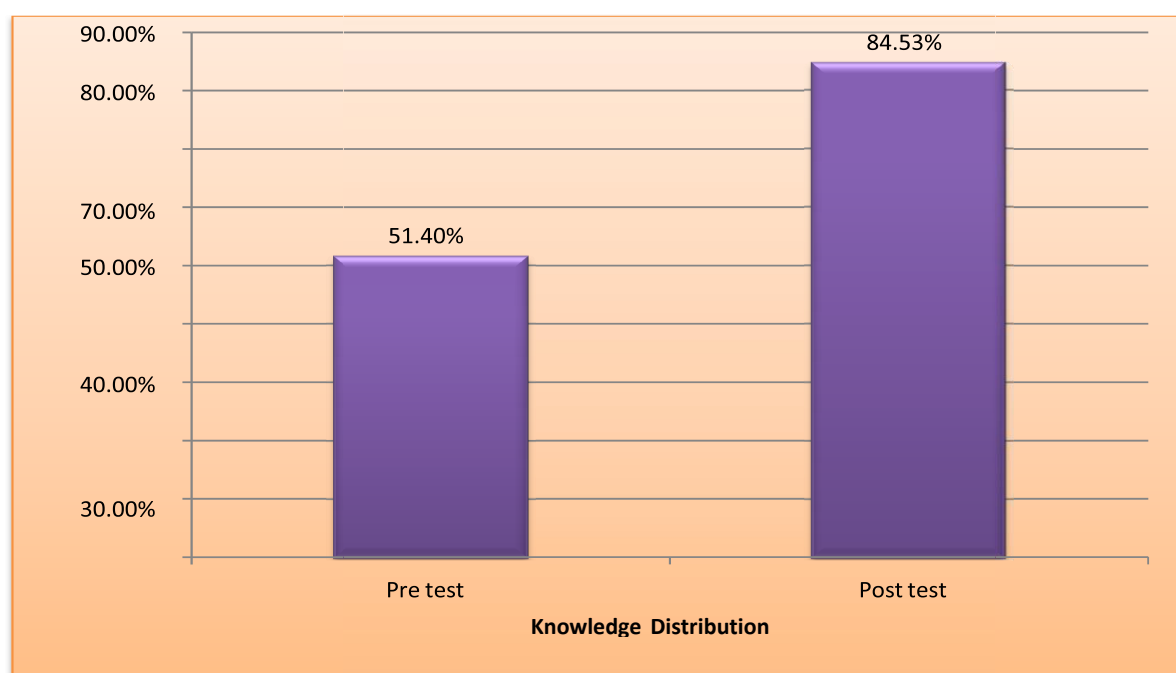

Figure 8: Overall pre-test and post-test knowledge levels of school-aged youngsters.

TABLE 9: ANALYSIS OF PRETEST AND POSTTEST KNOWLEDGE SCORES OF SCHOOL-AGE CHILDREN N-100

Knowledge	Number of Items	Maximum Score	Mean	Mean %	Median	SD
Pre test	30	30	15.42	51.4	17	3.685
Post test	30	30	25.36	84.53	25	3.555

Table 9 shows that the pre-test knowledge scores of the respondents were 15.42 (51.4%) with a 3.685 standard deviation. Following the distribution of the information booklet, respondents' post-test mean knowledge scores were 25.36 (84.53%) with a 3.555 standard deviation.

SECTION III: COMPARISON OF THE KNOWLEDGE LEVEL OF SCHOOL GOING CHILDREN
Table 10: Comparison of pre test and post test knowledge scores of school going children's
N-100

Knowledge	Mean	SD	Mean difference	t value	Inference
Pre test	15.42	3.685			
Post Test	25.36	3.555	9.94	18.909	S

Table 10: shows that, at the 0.01 level of significance, the derived "t" value of 18.909 is greater than the table value at degrees of freedom 49. It is concluded that the "t" value is significant as a result. Consequently, it can be said that school-age children's pre- and post-test knowledge scores on the management and prevention of nutritional deficiencies alter significantly..
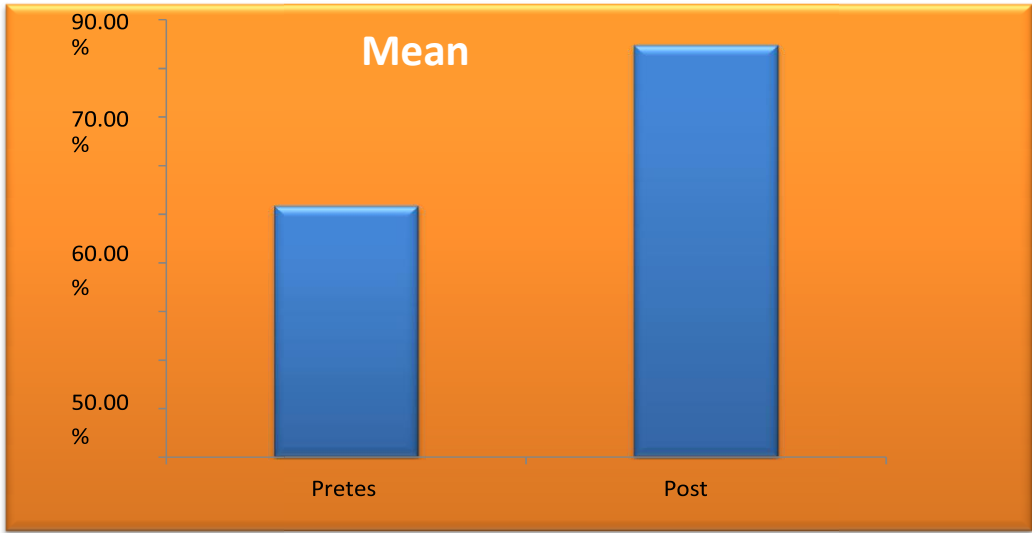
Figure 10 :compares the mean percentage of pre-test and post-test scores.

SECTION IV: ASSOCIATION OF PRE-TEST KNOWLEDGE SCORES OF SCHOOL-GOING CHILDREN WITH DEMOGRAPHIC VARIABLES

Table 11: Association of pre-test knowledge scores of school-age children with demographic characteristics.

N= 100

Variables	Below Median	Median and above	Chi square	Df	P value (0.05)	Inference
1. Age in years						
a. 6-8 years	6	10				
b. 9-10 years	18	22	0.765	2	0.682	NS
c. 11-13 years	22	22				
2. Education of mother						
a. Male	18	30	2.685	1	0.101	NS
b. Female	28	24				
3. Religion						
a. Hindu	38	44				
b. Muslim	4	6	0.200	2	0.905	NS
c. Christian	4	4				
4. Place of residence						
a.Urban area	18	16				
b. Semi urban area	20	18	4.756	2	0.093	NS
c. Rural area	8	20				
5.Type of family						
a. Nuclear family	38	52	5.171	1	0.023	S
b. Joint family	8	2				
6. Family income						
a. Less than Rs. 5000/-	2	6				
b. Rs.5001-10000/-	16	14				
c. Rs. 10001-15000/-	24	26	2.925	3	0.403	NS
d. More than Rs. 15000/-	4	8				
7. Source of information						
Family/friends	0	6				
b. Mass media	8	22				
c. Academics	22	12	15.064	3	0.002	S
d. Health Personnel	16	14				

DISCUSSION

The purpose of the current study was to assess how an information booklet at BEMH School in Belagavi affected school-age children's management and prevention of nutritional deficiencies. An evaluative research method and a pre-experimental design with a single group pre-test-post-test were used to accomplish the goals, and a straightforward random sampling procedure was used to choose the samples. From March 3, 2023, until March 10, 2023, the study was conducted. Structured questionnaires were used to collect data from 100 school-age children enrolled in a Belagavi school. An information booklet was then distributed to the participants. A post-test was given a week later.

The objectives of the study were

1. Evaluate students' pre-test knowledge of preventing and managing nutritional deficits.
2. Evaluate post-test knowledge of school-aged children on preventing and managing nutritional deficits.
3. Evaluate the impact of an information pamphlet on schoolchildren's understanding of preventing and managing nutritional deficits.
4. Determine the relationship between pre-test knowledge of nutritional deficiencies prevention and management among school-aged children and specified demographic characteristics.

The study attempted to test the following hypothesis:

H1: There is a substantial difference in school-age children's pre- and post-test knowledge scores related nutritional deficiency prevention and management.
H2: There is a strong relationship between pre-test knowledge of school-aged children about the prevention and management of nutritional deficiencies and certain demographic characteristics.

The study's findings are discussed under the following areas.

Section I: Outlines the demographic traits of children enrolled in school.
Section II: School-age children's pre- and post-test knowledge scores, both overall and by region, regarding the management and prevention of nutritional deficiencies.
Section III : Compares the knowledge scores from the pre- and post-tests for children who are enrolled in school.
Section IV : Presents the relationship between several demographic traits and pretest knowledge levels.

Section I: Demographics of school-aged youngsters.

☐ The study included 44% individuals aged 11-12 and 16% aged 6-8 years.
48% of the subjects were male, whereas 52% were female.

☐ The majority The Hindu faith accounts for 82% of the subjects, while Muslims make up 10%.
The majority 34% of the participants reside in an urban area, 38% live in a semi-urban area, and the remaining 28% live in rural areas.
☐ 90% of school-aged children live in nuclear families, with the remaining 10% in joint families.
In terms of family income, 50% of school-aged children reported earning between Rs.10001-15000 per month, while 8% earned less than Rs.5000. 34% of participants received information from academics, whereas 30% received information from health personnel.

Section II: School-aged children's knowledge of dietary deficiencies and how to prevent them.

The majority 56% of the respondents had moderate knowledge during the pretest, while 44% had insufficient understanding. 32% of the individuals had a moderate awareness of the prevention and management of nutritional deficiencies, compared to 68% of the subjects who had adequate knowledge in the post-test.

With a standard deviation of 3.685, school-age children's overall mean pre-test knowledge score was 15.42 (51.4%). School-age children obtained an overall mean knowledge score of 25.36 (84.53%) on the post-test, with a standard deviation of 3.555.

Section III: Comparison of pre-test and post-test knowledge scores among school-aged youngsters.

The children who attended school obtained a mean score of 15.42 (51.4%) with a standard deviation of 3.685 on the pretest, and a mean score of 25.36 (84.53%) with a standard deviation of 3.555 on the posttest.

With a 't' value of 18.909 and an overall knowledge score mean difference of 9.94, the difference was statistically significant at $p < 0.01$. It suggests that school-age children's pre- and post-test knowledge levels on the management and prevention of nutritional deficiencies fluctuate significantly.

Section IV: The relationship between pretest knowledge scores and selected demographic variables.

A statistically significant link was discovered between school-aged children's pre-test knowledge score and demographic factors such family structure and information source at the 0.05 level of significance. Thus, the study hypothesis—which proposed that post-test knowledge scores of school-aged children regarding the prevention and management of nutritional deficiencies would be significantly correlated with selected demographic variables—was accepted.

Conclusion:

The results, implications, constraints, ideas, and advice are covered in this chapter. This study was conducted at the BEMH School in Belagavi, Karnataka, to evaluate the impact of an information booklet on school-age children's knowledge of the management and prevention of nutritional deficiencies. An evaluative method and a quasi-experimental design were employed in the investigation. The basic random sampling technique was used to get data from 100 samples.
To ascertain the link, the collected data was analyzed using both inferential and descriptive statistics, including the chi square test and the 't' test, as well as frequencies and percentages.

MAJOR FINDINGS OF THE STUDY

➢ The bulk of individuals in the study were between the ages of 11 and 15, with 16% aged 6 to 8.
➢ 48% of the subjects were male, whereas 52% were female.
➢ The majority of subjects (82%) are Hindus, with 10% being Muslims.
➢ Majority 34% of the participants reside in an urban area, 38% live in a semi-urban area, and the remaining 28% live in rural areas.

- ➤ 90% of children live in nuclear families, while the remaining 10% attend school in joint families.
- ➤ In terms of family income, the majority of school-aged children (50%) reported monthly incomes ranging from Rs.10001 to Rs.15000, with 8% reporting incomes less than Rs.5000.
- ➤ Among the participants, 34% received information from academics, whereas 30% received information from health personnel.
- ➤ The overall mean knowledge score of the subjects in the pre-test was 15.42, which was deemed to be inadequate. The overall mean knowledge score of the subjects in the post-test was 25.36, indicating an improvement in knowledge.
- ➤ The mean difference in overall knowledge score was 9.94 with a 't' value of 18.909, which was significant at p<0.01.

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