

A Pre - Experimental Study to Assess the Effectiveness of Informational Booklet on Knowledge and Practices regarding Well Balanced Diet among Mothers of under Five Children in Selected Areas of District Kangra, (H. P.).

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Abstract: *Balanced diet and sufficient nutritional intake is most essential for children to promote optimal growth and development. An Pre - experimental one group pre - test post - test design, was used to select 60 mothers of under five children by using non probability purposive sampling technique from five selected areas of district Kangra, H. P. Self structured informational booklet was provided to mothers after the assessment of pre - test knowledge and practices regarding well balanced diet. Post - test knowledge and practices was assessed on the 7th day of informational booklet through self structured knowledge questionnaire and self structured practices checklist. The result of this study showed, significant difference between the mean post - test (27.47) was higher than pre - test (12.13) knowledge scores, mean post - test (19.10) was higher than pre - test (27.63) practices score, positive correlation exists $r=0.749$ between post - test knowledge and post - test practices score and obtained 't' value has been found statistically very highly significant (30.489) at $p<0.05$ level of significance. Hence it was concluded that informational booklet in educational programme was an effective strategy for improving mothers knowledge and practices regarding well balanced diet of children.*

Keywords: Effectiveness, Informational Booklet, Well Balanced Diet, Knowledge, Practices

1. Introduction

Optimum nutrition and good feeding of infants and young children are among the most important determinants of their health, growth and development. Good feeding practices will prevent malnutrition and early growth retardation. Poorly fed children have greater rates and severity of enteric and other infections, and they are at risk of dying prematurely. Balanced diet is the provision to cells and organisms, to support life. Many common health problems can be prevented or alleviated with a balanced diet. Thus improvements in nutrition are desirable not only for the physical health and growth of young children but also for reducing the risk of infection, maximising cognitive and psychomotor development, as well as academic performance. A diet is all that we consume in a day. And a balanced diet is a diet that contains an adequate quantity of the nutrients that we require in a day. The nutrient classes can be categorised as either macronutrients (needed in relatively large amounts) or micronutrients (needed in smaller quantities). The macronutrients includes carbohydrates, fats, protein and water. The micronutrients are minerals and vitamins. Vitamins, minerals, water and fiber do not provide energy, but are required for other reasons. Some part of our energy requirement is fulfilled by fats it is found in fatty foods such as butter, ghee, oil, cheese, etc. We need proteins for growth purposes and to repair the wear and tear of the body. It is found in dairy products, sprouts, meat, eggs, chicken, etc. Micronutrients are one of

the major groups of nutrients your body needs. They include vitamins and minerals. Vitamins are necessary for energy production, immune function, blood clotting and other functions. The micronutrient content of each food is different, so it's best to eat a variety of foods to get enough vitamins and minerals. An adequate intake of all micronutrients is necessary for optimal health, as each vitamin and mineral has a specific role in your body. Consuming a diet with balanced nutrient intake is not only necessary to prevent and manage chronic disease, but also essential for children and adolescents to ensure their healthy development. Food items should be digestible, attractive, choiceable and easily available. Mothers knowledge about their child's nutrition is important because child care is mostly the responsibility of mothers, education has a positive impact on their knowledge and practice in child health matters. It will help to access effective interventions that means less risk of undernutrition, overnutrition and or other nutritional problems. World's greatest resource for a healthy future lies in the children of today. Today's children are the tomorrow's citizen or leaders. So it is mandatory to provide education to mothers of under - five children and improve their nutritional practices, because mothers play primary role in the care of the children.

2. Need for Study

As children are considered as the most potential unit of future human resources in every country. A better tomorrow

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depends much on the well being of children. Children are often considered priority population for intervention strategies. Good nutrition is the fundamental pillar for the maintenance of positive health, because the foundation of our lifetime health, strength, intelligence and vitality is laid during this period. Good nutrition is essential for healthy, thriving individuals, families and a nation. The effects of childhood malnutrition include diminished immune functioning; which leads to greater susceptibility to infection, especially gastrointestinal and respiratory infections; which leads in turn to increased child mortality. Parents are mostly responsible on this subject. Parents are effective on their children's eating behaviors and preferences. Especially, mothers are the role models of their children about eating behaviors. Mother's perfect nutrition

knowledge plays an important role of their children health issue. Therefore, it is important to determine mother's eating habits to support healthy nutrition of both child and mother. Eating behaviors of the mother are affected by some factors such as socioeconomic status, educational status, age, working position, and knowledge level of nutrition of mother. World Hunger Key Facts And Statistics 2022, An estimated 14 million children under the age of five worldwide suffer from severe acute malnutrition, also known as severe wasting, yet only 25 percent of acutely malnourished children have access to life saving treatment. In Himachal Prevalence of stunting, wasting and underweight among children under 5 years as per the National Family Health Survey (NFHS - 4 & NFHS - 5).

State	Stunting (%)		Wasting (%)		Underweight (%)	
	NHFS 4 (2015 - 16)	NHFS 5 (2019 - 21)	NHFS 4 (2015 - 16)	NHFS 5 (2019 - 21)	NHFS 4 (2015 - 16)	NHFS 5 (2019 - 21)
Himachal Pradesh	26.3	30.8	13.7	17.4	21.2	25.5

3. Objectives

- To assess the pre - test knowledge and practices score regarding well balanced diet among mothers of under five children.
- To assess the post - test knowledge and practices score regarding well balanced diet among mothers of under five children.
- To compare the pre - test and post - test knowledge scores regarding well balanced diet among mothers of under five children.
- To compare the pre - test and post - test practices score regarding well balanced diet among mothers of under five children.
- To determine the relationship between knowledge and practices regarding well balanced diet among mothers of under five children.
- To find out the association of post - test knowledge scores of mothers of under five children with their selected socio demographic variables.
- To find out the association of post - test practices score of mothers of under five children with their selected socio demographic variables.

Research Design: A Pre - experimental: One – group pre - test – post - test designis used because it involved the manipulation of independent variable to observe the effect on dependent variable.

Population: The population of the present study was mothers of under five children.

In present study, target population was all the mothers of under five children.

In present study, accessible population was mothers of under five children residing in selected areas of district Kangra (H. P.) Gram Panchayat Deogran, Saliyana, Gadiyada, Kuhan and Balakrupiand fulfills the selection criteria.

Sample and Sampling Technique

- The sample of present study was mothers of under five children in selected areas of district Kangra, H. P.

- In present study sample was selected by Non probability purposive sampling technique.
- In present study sample size constitutes 60 mothers of under five children.

Criteria for Sample Collection

A. Inclusion Criteria:

This study includes mothers of under five children:

- Who were willing to participate in the study.
- Who were present at the time of data collection.
- Who were able to read and write hindi and english language.

B. Exclusion Criteria:

- This study excludes mothers:
- Who's children were older than five year of age.
 - Who were not willing to participate in the study.
 - Who were not be able to read and write.

Description of Tool:

It consisted of two sections;
Part –I: Socio demographic variables. The first part of the tool consist of some items for obtaining an information about the selected background factor such as age (in year), religion, educational qualification, occupation, area of residence, type of family, monthly family income (in rupees), birth order of children, previous knowledge if yes, source of knowledge.

Part - II: Section A & Section B

Section A: -

- Self structured knowledge questionnaire. It consists of self structured knowledge questionnaire which seeks information regarding well balanced diet. It consists of 30 items of multiple - choice questions where total score is 30.
- Self structured observational checklist.

It consists of self structured practice checklist which seeks practices of mothers of under five children regarding well balanced diet. It consist of 30 statements where total score is 30.

Section B: Informational Booklet. It consists of systematically formulated booklet designed to provide information regarding well balanced diet.

Scoring Pattern: The self - structured knowledge questionnaire consisted of 30 questions. In which right answer was documented as correct one mark and wrong were documented were as zero marks. The complete range was 0 - 30.

Knowledge Score	Percentage	Range
Inadequate Knowledge	≤ 33%	0 - 10
Moderately adequate Knowledge	34 - 66 %	11 - 20
Adequate Knowledge	≥ 67%	21 - 30

The self - structured practice checklist consisted of 30 statements. In which right answer was documented as correct one mark and wrong were documented were as zero marks. The complete range was 0 - 30.

Practices Score	Percentage	Range
Poor Practices	≤ 33%	0 - 10
Average Practices	34 - 66 %	11 - 20
Good Practices	≥ 67%	21 - 30

To ensure content validity of the tool regarding the relevance of item, the tool was submitted to 10 experts of different fields of nursing. Experts are requested to judge the items of tool for clarity, relevance, appropriateness, relatedness and meaningfulness for the purpose of the study and give their opinion and suggestion on the content, its coverage, organization. There were almost 100% agreement of the items in the questionnaire and checklist; however there were few suggestions to modifying some of the questions and statements, and they were incorporated in final draft.

Reliability of tool was computed by applying Split - half methods with Karlpearson's Correlation Coefficient formula. The reliability of the self structured knowledge questionnaire was 0.92 and self structured practice checklist was 0.75. So the tool was reliable.

Written permission was obtained from the concerned authorities before the data collection and the investigator familiarized herself with her subjects and explained the purpose of the study to them. After giving necessary instructions to the subjects, the baseline information was collected along with knowledge. Pre - test knowledge level were assessed by self structured knowledge questionnaire and self structured practice checklist. Time taken for pre - test was 30 minutes. Immediately after the pre - test, informational booklets was provided to the subjects. Post - test was conducted on the 7th day using the same structured knowledge questionnaire and self structured practice checklist.

4. Results

Section I: Distribution of Socio Demographic Variables

Table 1: Frequency (f) and percentage (%) distribution of mothers with their selected socio demographic variables N =60

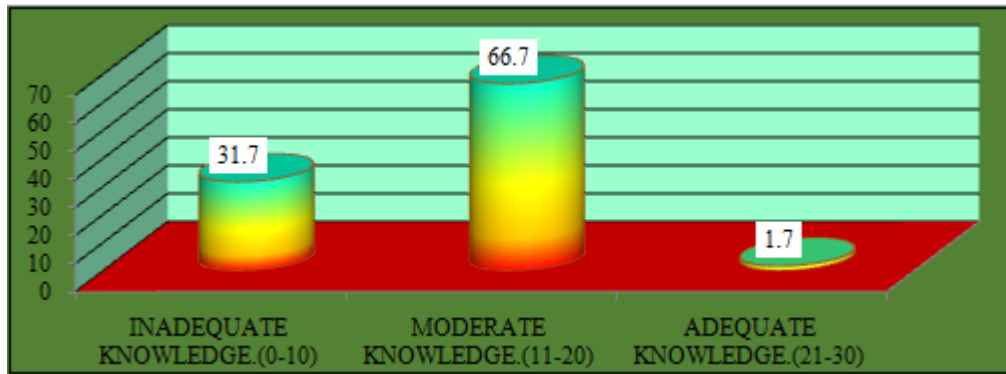
Demographic Variable	%	f
1. Age in (Years)		
a) 20 - 25	35.00	21
b) 26 - 30	33.33	20
c) 31 - 35	25.00	15
d) 36 and above	6.67	04
2. Religion		
a) Hindu	100.00	60
b) Muslim	0.00	00
c) Christian	0.00	00
d) Sikh	0.00	00
3. Educational Qualification		
a) No Formal Education	1.66	01
b) Upto Class 12 th	80.00	48
c) Graduation	16.67	10
d) Post Graduation and above	1.67	01
4. Occupation		
a) House wife	91.67	55
b) Self - employed	3.33	02
c) Government Job	1.67	01
d) Private Job	3.33	02
5. Area of Residence		
a) Rural	98.33	59
b) Urban	1.67	01
6. Family Type		
a) Joint family	58.33	35
b) Nuclear family	41.67	25
7. Monthly Family Income (In Rupees)		
a) <10, 000	38.33	23
b) 10, 001- 20, 000	43.33	26
c) 20, 001 - 30, 000	16.67	10
d) > 30, 000	1.67	01
8. Birth Order		
a) 1 st	56.67	34
b) 2 nd	35.00	21
c) 3 rd	8.33	05
d) 4 th	0.00	00
9. Previous Knowledge		
a) Yes	96.67	58
b) No	3.33	02
Source of knowledge		
a) Health professionals / social worker	35.00	21
b) Newspaper / magazine	3.33	02
c) Radio/ television	10.00	06
d) Friends / relatives	48.33	29

Section II: Pre - Test knowledge scores regarding well balanced diet among mothers of under five children

Table 2: Frequency and percentage distribution of pre - test knowledge scores regarding well balanced diet among mothers of under five children, N=60

Pre - Test Knowledge Score	Range	f	%	%
Inadequate Knowledge	0 - 10	19	≥33	31.70
Moderate knowledge	11 - 20	40	34 - 66	66.70
Adequate knowledge	21 - 30	01	≤67	1.70

Maximum Score=30 Minimum Score=00

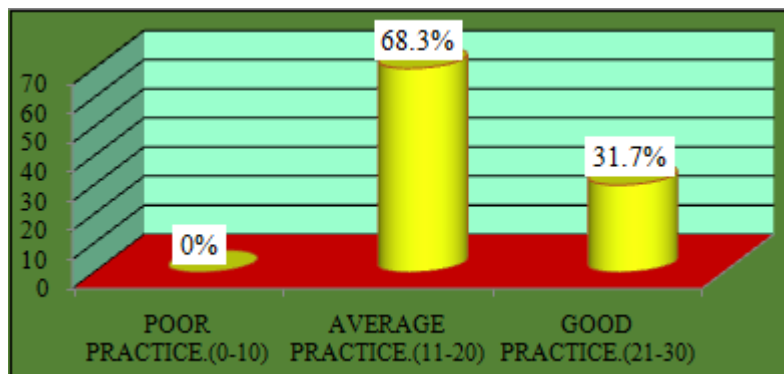


Section II: (b) Pre - test practices score regarding well balanced diet among mothers of under five children

Table 2: Frequency and percentage distribution of pre - test practices score regarding well balanced diet among mothers of under five children, N=60

Pre - Test Practices Score	Range	f	%	%
Poor Practices	0 - 10	00	>33	00
Average Practices	11 - 20	41	34 - 66	68.33
Good Practices	21 - 30	19	<67	31.70

Maximum = 30 Minimum = 00

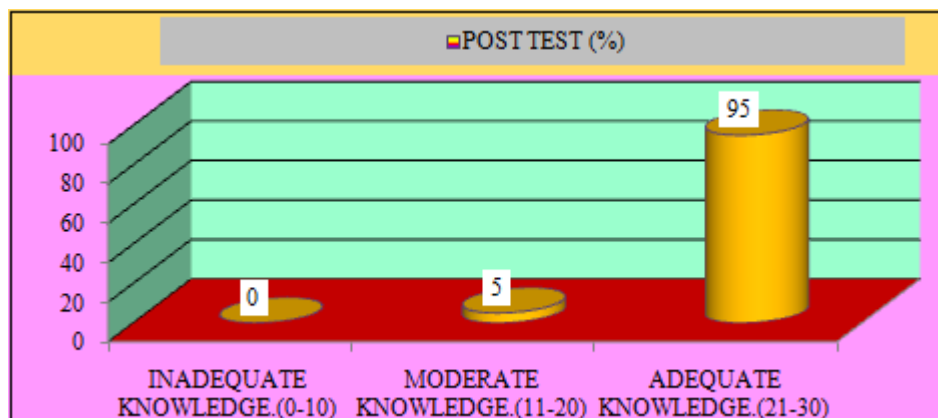


Section III: (a) Post - test knowledge scores regarding well balanced diet among mothers of under five children

Table 3: Frequency and percentage distribution of post - test knowledge scores regarding well balanced diet among mothers of under five children, N=60

Post - test Knowledge Scores	%	Range	f	%
Inadequate knowledge	≤33	0 - 10	00	00
Moderately adequate knowledge	34 - 66	11 - 20	03	05
Adequate knowledge	≥67	21 - 30	57	95

Maximum =30 Minimum=00

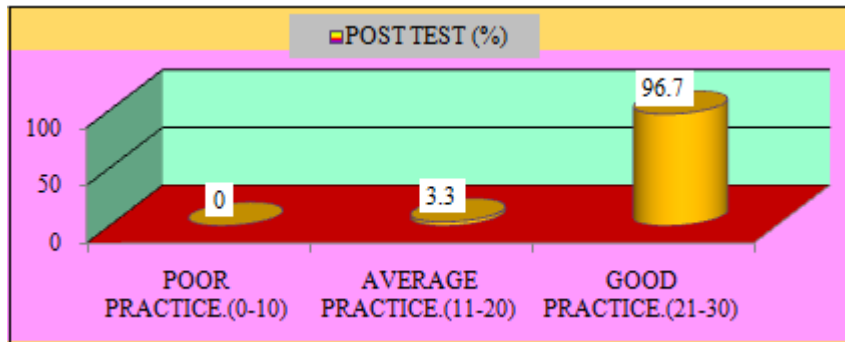


Section III: (b) Post - test practice scores regarding well balanced diet among mothers of under five children

Table 4: Frequency and percentage distribution of post - test practices score regarding well balanced diet among mothers of under five children N=60

Post - Test Practices Score	%	Range	f	%
Poor Practices	≥33	0 - 10	00	00
Average Practices	34 - 36	11 - 20	02	3.33
Good Practices	<67	21 - 30	58	96.70

Maximum Score=30 Minimum Score =00

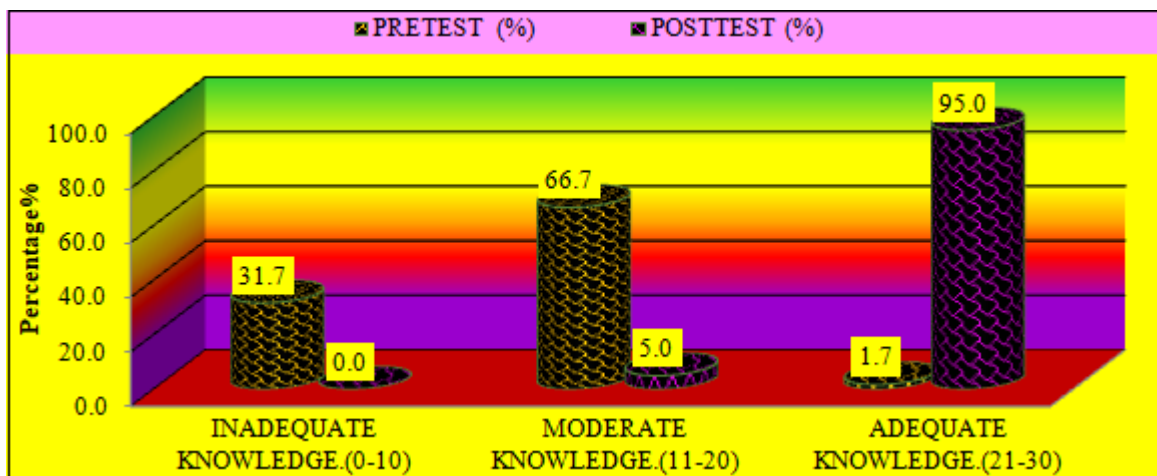


Section IV: (a) Comparison between the pre - test and post - test knowledge scores regarding well balanced diet among mothers of under five children

Table 5: Comparison between pre - test and post - test knowledge scores regarding well balanced diet among mothers of under five children, N=60

Knowledge Scores	Mean ±S. D.	Mean %	Range	Mean Difference	df	Paired t Test	P Value
Pre - test Knowledge	12.13±3.275	40.40	6 - 24	15.340	59	30.489*	<0.05
Post - test Knowledge	27.47±2.281	91.60	20 - 30				

p value <0.05 = Significant;

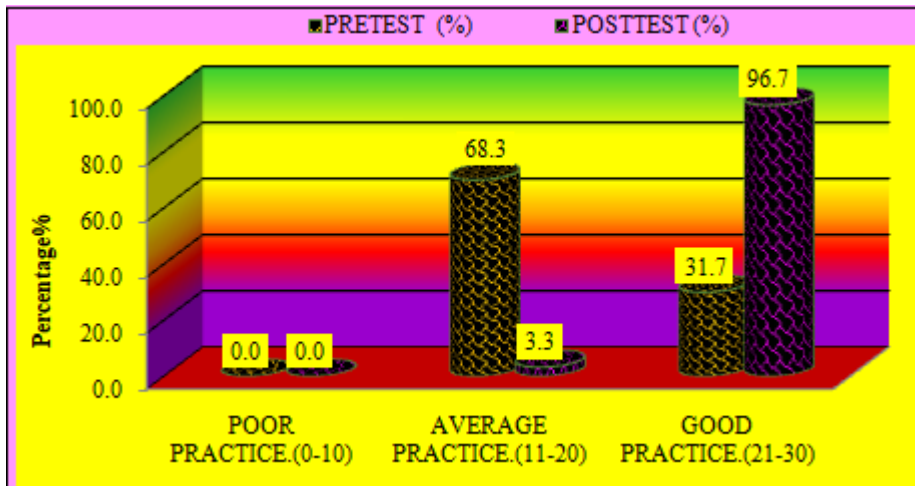


Section -IV: (b) Comparison between the pre - test and post - test practices score regarding well balanced diet among mothers of under five children

Table 6: Comparison between pre - test and post - test practices score regarding well balanced diet among mothers of under five children, N=60

Practices Scores	Mean ±S. D.	Mean %	Range	Mean Difference	Paired t Test	P Value
Pre - test Practices	19.1±3.358	68.33	12 - 29	8.530	18.883*	<0.001
Post - test Practices	27.63±2.017	96.70	20 - 30			

p value <0.05 = Significant, <0.01 highly significant; <0.001= very highly significant



Section V: Relationship between knowledge and practices regarding well balanced diet among mothers of under five children

Table 7: Correlation between knowledge and practices regarding well balanced diet among mothers of under five children,

N=60

Scores	Spearman correlation coefficient (r)	P value
Post - test Knowledge Scores	0.749*	0.000
Post - test Practices Score		

S - significant (p< 0.05) NS - Not significant (>0.05)

Section VI (A) Association of post - test knowledge scores of mothers of under five children with their selected socio demographic variables

Table 8: Chi square showing association of post - test knowledge scores among mothers of under five children with their selected socio - demographic variables N=60

Socio - demographic Variables	Adequate Knowledge	Moderately Adequate Knowledge	Inadequate Knowledge	df	χ^2	P Value
1. Age (in Years)						
a) 20 - 25	20	01	00	03	0.301 ^{NS}	0.960
b) 26 - 30	19	01	00			
c) 31 - 35	14	01	00			
d) 36 and above	04	00	00			
2. Educational Qualification						
a) No Formal Education	01	00	00	03	0.789 ^{NS}	0.852
b) Upto Class 12 th	45	03	00			
c) Graduation	10	00	00			
d) Post Graduation and above	01	00	00			
3. Occupation						
a) Housewife	53	02	00	03	19.426*	0.000
b) Self - employed	02	00	00			
c) Government Job	00	01	00			
d) Private Job	02	00	00			
4. Area of residence						
a) Rural	56	03	00	01	0.054 ^{NS}	0.817
b) Urban	01	00	00			
5. Type of family						
a) Joint family	33	02	00	01	0.090 ^{NS}	0.764
b) Nuclear family	24	01	00			
6. Monthly Family Income (In Rupees)						
a) <10, 000	22	01	00	03	0.996 ^{NS}	0.802
b) 10, 001-20, 000	24	02	00			
c) 20, 001 - 30, 000	10	00	00			
d) > 30, 000	01	00	00			
7. Birth Order Of Children						
a) 1 st	31	03	00	02	2.415 ^{NS}	0.299
b) 2 nd	21	00	00			

c) 3 rd	05	00	00			
d) 4 th	00	00	00			
8. Previous Knowledge						
a) Yes	55	03	00	01	0.109 ^{NS}	0.741
b) No	02	00	00			
If yes, source of knowledge						
a) Health professionals / social worker	21	00	00	03	3.046 ^{NS}	0.385
b) Newspaper / magazine	02	00	00			
c) Radio/ television	05	01	00			
d) Friends / relatives	27	02	00			

*S=Significant NS=Not Significant

(b) Association of post - test practices score of mothers of under five children with their selected socio demographic variables

Table 9: Chi square showing association between post - test practices scores among mothers of under five children with their selected socio - demographic variables N=60

Socio – demographic Variables	Good Practices	Average Practices	Poor Practices	df	χ^2	P Value
1. Age (in Years)						
a) 20 - 25	20	01	00	03	1.478 ^{NS}	0.687
b) 26 - 30	20	0	00			
c) 31 - 35	14	01	00			
d) 36 and above	04	00	00			
2. Educational Qualification						
a) No Formal Education	01	00	00	03	0.915 ^{NS}	7.815
b) Upto Class 12 th	46	02	00			
c) Graduation	10	00	00			
d) Post Graduation and above	01	00	00			
3. Occupation						
a) Housewife	53	02	00	03	0.188 ^{NS}	0.979
b) Self - employed	02	00	00			
c) Government Job	01	00	00			
d) Private Job	02	00	00			
4. Area of residence						
a) Rural	57	02	00	01	0.035 ^{NS}	0.851
b) Urban	01	00	00			
5. Type of family						
a) Joint family	33	02	00	01	1.478 ^{NS}	0.224
b) Nuclear family	25	00	00			
6. Monthly Family Income (In Rupees)						
a) <10, 000	22	01	00	03	0.474 ^{NS}	0.925
b) 10, 001– 20, 000	25	01	00			
c) 20, 001 - 30, 000	10	00	00			
d) > 30, 000	01	00	00			
7. Birth Order Of Children						
a) 1 st	33	01	00	02	5.051 ^{NS}	0.080
b) 2 nd	21	00	00			
c) 3 rd	04	01	00			
d) 4 th	00	00	00			
8. Previous Practices						
a) Yes	56	02	00	01	0.071 ^{NS}	0.789
b) No	02	00	00			
If yes, source of practices						
a) Health professionals/ social worker	21	00	00	03	2.071 ^{NS}	0.558
b) Newspaper / magazine	02	00	00			
c) Radio/ television	06	00	00			
d) Friends / relatives	27	02	00			

*S=Significant NS=Not Significant

5. Discussion

The purpose of the study was to assess the effectiveness of informational booklet on knowledge and practices regarding well balanced diet among mothers of under five children. This study finding revealed that the self structured

informational booklet is an effective method to improve mothers knowledge and practices regarding well balanced diet of children i.e., from mean pre - test knowledge scores (40.40%) to post test mean knowledge scores (91.60%). The findings were consistent with the findings of 't' value obtained was (30.489) at p<0.001 level of significance

which is very highly significant. The post test score was high as compare to pre - test score, which shows the effectiveness of informational booklet. Hence, the research hypothesis H_1 was accepted and H_{01} was rejected.

Another study had been found by **Masood Jamal et al, (2020)** the findings shows that the mean pre - test knowledge scores was (6.86) and post - test scores was (10.29). The calculated 't' value (24.864) which was higher than tabulated value. This study concluded that structured teaching programme nutritional diet should be implemented to improve the knowledge among the mothers of under five children for providing a better health. In this study there is positive correlation ($r=0.749$) between post - test knowledge and post - test practices score. Thus, the research hypothesis H_3 was accepted and null hypothesis H_{03} was rejected, as there is significant relationship between post - test knowledge and post - test practices. Another study by **Devi Anusuya V. (2011)** was conducted a correlational study to assess the knowledge on nutrition of under five children among the migrating mothers and prevalence of nutritional problems among their children in selected rural community, Thiruvallur district, Tamil Nadu. The findings ($r= - 0.225$) which showed statistically negative correlations between knowledge on nutrition of under five and degree of malnutrition. So it was concluded that nutritional knowledge is effective when it was practiced, it helps to improve health of under five children and reduce risk of nutritional problems.⁸⁷

6. Conclusion

The results from this study reveals that implementation of informational booklet to assess the knowledge and practices regarding well balanced diet was adequate. As mothers of under five children were very possessive and caring for their children, mothers shows interest towards awareness programme. That's why mothers of under five children showed interest in structured teaching programme. And the chi square value had significant only in selected demographic variable i. e., occupation of mothers so it is considered that occupation of mothers also helpful in improving knowledge of mothers regarding well balanced diet but the chi square value had not significant association between practices scores regarding well balanced diet with selected demographic variables so it is concluded that selected demographic variables had no effect on mothers practices regarding well balanced diet of children. We hypothesized that providing educational programme with the use of informational booklet may improve the knowledge and practices regarding well balanced diet of mothers of under five children. This hypothesis was supported by the findings of the current study as scores of knowledge and practices improved significantly after interventional educational programme. In the light of the above findings and personal experience of the investigator the following recommendations are offered.

- 1) A similar study can be conducted on large sample size for better generalization.
- 2) A similar study can be conducted among mothers of other age groups.
- 3) Self structured video teaching programme can be more effective for future study.

- 4) Comparative study can be conducted to the rural area and urban area for better finding.
- 5) A cross - sectional study can be conducted to assess knowledge, attitude and practices of mothers regarding nutrition of under five children in rural setting.
- 6) A similar study can be conducted to assess the knowledge, practices and attitude of mothers of under five children regarding well balanced diet.

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